MRPPal

Software for Material Requirements Planning
Including
Purchasing, Warehouse Management, Inventory Control and Cost estimation

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MRPPal User Guide

Background & Philosophy

Materials are one of the main components of cost of production in a manufacturing industry. Impact of poor Material Requirements Planning is felt on two areas –

1. Build up inventory - locking up precious capital and mounting interest costs
2. Floundering production operations – resulting in
   a. Missed on-time-deliveries to customers
   b. Idle manpower – resulting in loss of morale.

Both have severe negative impact on the organizational profitability and survival. Hence, the importance of a robust Material Requirements Planning cannot be over-emphasized for a manufacturing organization.

If the organization is into mass production, perhaps, material planning can be achieved manually. In case of batch production and job order (or made-to-order) organizations, it would be very difficult to achieve materials planning without the use of computers.

Material Requirements Planning (MRP) uses four inputs –

1. BOM (Bill of Material) of the products
2. Materials available in raw material stores
3. Material that is on order
4. Production program

From those four inputs, MRP prepares a Master Bill of Material (MBOM) for the organization. From this MBOM, MRP gives out the useful information such as –

1. Total requirements of materials
2. Date-wise requirements of materials
3. Material Bottlenecks (materials that are required for production but are, as yet, not available in the organization)
4. And other relevant reports.

MRP software packages are available for the last thirty years – but they have been priced very exorbitantly and not within the reach of small and medium manufacturing organizations.

MRPPal fills that niche by offering a low cost PC based MRP system. **MRPPal** software is designed for small and medium enterprises with a view to assist them in efficient material management.

Benefits of MRPPal

Inventory is a cost center for organizations and every organization endeavors to minimize the build up of inventory and yet make materials available on time so that the production operations run smoothly without being hampered and ensures that the

investment in infrastructure (machines) is not idling and that the manpower is not idle. **MRPPal** is -

1. Full functionality
2. Collaborative
3. Integrated
4. High-value
5. Low cost

MRPPal Functionality

Specifically, **MRPPal** provides the following functionalities –

1. **Material Requirements Planning**
2. **Material Procurement**
3. **Warehouse Management**
4. **Inventory Control**
5. **Cost Estimation**

It is a fully **collaborative tool** – which means –

1. Data entry need not be duplicated
2. Information entered at one workstation is accessible at other workstations
3. No time or resources are expended in making info available to persons

It is an **integrated tool** – which means –

1. All the functionalities are available from with in the tool
2. The application is not split into smaller products

It is a **secure tool** – that is

1. A strong **role based security** is built into the product – this prevents giving unauthorized access to people and thus prevents unintended damage to vital and sensitive data
2. While every one who can log into the system can have access to info – such persons can not modify any data for which their role does not have permission
3. Entry is restricted thru login name and password so that it is not possible for all and sundry to enter the system
4. One can not access the data unless the software is loaded on his computer system – this is an additional precaution besides login and password protections

Material Requirements Planning

MRPPal facilitates the following in **Material Requirements Planning** –

1. Definition of BoMs (Bills of Material) – each BoM is for a product and can have a depth up to three levels for sub-Assemblies – that is – a product may have assembles and each sub assembly can have further sub-assemblies and each

sub-assembly can have sub-sub-assemblies. MRPPal pulls the material requirements from all the assemblies, sub-assemblies and sub-sub-assemblies

2. Definition of projects
3. **MRPPal** plans material requirements for all open project – that is – projects that are not yet closed as on the date of planning
4. **MRPPal** derives material requirements in three categories, namely, bought-out, made-in-house and subcontracted categories.
5. **MRPPal** derives material bottlenecks taking into consideration the stock on hand and on order.
6. **MRPPal** gives a host of reports including
   a. Date-wise Material Requirements reports – detailed - for bought-out items
   b. Date-wise Material Requirements reports – detailed - for Made-in-house items
   c. Date-wise Material Requirements reports – detailed - for subcontracted items
   d. Date-wise Material Requirements reports – summary - for bought-out items
   e. Date-wise Material Requirements reports – summary - for Made-in-house items
   f. Date-wise Material Requirements reports – summary - for subcontracted items
   g. Date-wise Materials to be procured report – items which are not in stores and also not on purchase order
   h. Date-wise Material Bottlenecks reports - for bought-out items
   i. Date-wise Material Bottlenecks reports - for Made-in-house items Date-wise Material Bottlenecks reports - for subcontracted items
   j. Production Program

Purchasing

MRPPal facilitates the following in **Material Procurement** –

1. Maintain Vendor Master
2. Raising MPRs (Material Procurement Requisition)
3. Raising RFPs (Request for Proposal) – or solicitation for quotes for supply of material
4. Compilation of Quotes received
5. Capture PO recommendation
6. Purchase Orders (Place, amend and cancel)

Warehouse Management

MRPPal facilitates the following in **Warehouse Management** –

1. Maintain Material Master
2. Material Receipts
3. Material Issues
4. Material Returns (that is returning material that was issued by the warehouse back to warehouse)

5. Stock Enquiry
6. Uses FIFO (First in First Out) methodology
7. A host of reports – including Priced Stores Ledger, Stock Report, below re-order level, expiry of material, material receipts against a PO or a vendor, category-wise stock and so on

Inventory Control

Inventory Control module of **MRPPal** provides a host of reports using which cost of inventory could be optimized. Some of these reports are

1. HML (High, Medium and Low cost) report based on unit rate of materials
2. VED (Vital, Essential and Desirable) materials report
3. IIL (Imported, Indigenous and local) report based on source of procurement
4. Non-moving and fast-moving items reports
5. Material consumption reports for a period or a specific material or against a project

Cost Estimation

MRPPal recognizes the difficulties involved in efficient cost estimation for the projects, especially for the made-to-order organizations, and provided the **Cost Estimation** module. This facilitates

1. Follows the traditional Cost Estimation model – that is direct and indirect personnel cost, direct and indirect material cost, overheads and profit
2. Estimation of Effort in four classes of manpower, namely, Engineering staff, QA staff, Technical Assistants and Shop-floor staff
3. Material Cost Estimation is provided in two ways –
    a. Selecting the materials from the inventory – cost of the latest receipt is pulled in automatically by **MRPPal**
    b. Using the BoMs and indicating quantity of the products included in the project – **MRPPal** automatically estimates all the material requirements from the BoMs
4. Person Hour cost, Overheads, and profit are configurable for each project

MRPPal permits all the roles to access and print out all reports. This is done with a view that information must be accessible to all. However, modification is based on the role they play.

Except for a few administrative functions, all the screens are accessible so that information can be seen on the screen itself – but modification of any info is restricted based on the role.

The subsequent sections explain how to use **MRPPal**.

Introduction

MRPPal assists you in the following ways -

1. In the efficient record keeping of the Stores Management. It allows you to receive materials, issue materials and carry out analysis like VED(Vital, Essential and Desirable),IIL (Imported, Indigenous and Local), And HML(High Cost, Medium Cost and Low Cost) analysis. It generates reports of Inventory, PSL(Priced Stores Ledger), Stock Report, Consumption Report for the organization as well as for a project.
2. In Material Requirements Planning. It allows you to define BoMs (Bills of Material). It gives you the consolidate material requirements as well as Bottle-Necks (Shortage of materials) reports
3. It facilitates purchasing and Inventory Control

First Things First

Before you start using the package, you need to do these things first

1. Enter employees using **Administration-User Management** facility
2. Enter Material Units using **Tools-Maintain Material Units** option
3. Enter Material Categories using **Tools-Maintain Material Categories** option
4. Enter Material Master using **File-Masters-Maintain Material Master**
5. Enter the projects using **Administration-Projects** option
6. Enter the Vendor Details using the **File-Masters-Vendor Master** option

Now, please note that -

1. You need to have a purchase order before material can be received. If your organization follows order-by-phone, or have an understanding with vendors, define an open purchase order and modify its quantity for each of those vendors. This facilitates material receipts
2. Until, you enter the **Accepted Quantity** in the **Material Receipts screen**, it would not be taken into stock and hence material issue is not allowed. So before trying to issue material, ensure that **Accepted Quantity** is entered in the **Material Receipts screen**.
3. This package is built on **FIFO - First In First Out** methodology costing philosophy. You may please note

Preliminaries - Company Details

First thing you need to do is enter the details of your organizations. This is achieved by -

1. Click on the top **Tools** menu and select **Setup** option
2. **Company Details** screen would appear
3. Enter the **Company Name** - maximum 50 characters.
4. You may enter the address of the company - but this is optional
5. Click on **Save** Button and the details would be saved.
6. Clicking on **Close** Button would Close the screen

The name of the company you entered in this screen would be used in all report headings and in the splash screen, which is displayed when you invoke **MRPPal** also.

Preliminaries - Material units

MRPPal comes with a set of commonly used **Units of Measure**. Please verify these units and you may correct them to suit your specific environment as well as add new units of measure. You may delete some units of measure also. This can be accomplished by a person who logged in with the role of **Administrator**

These functions can be achieved by clicking on the top **Tools** Menu and selecting the option Maintain Material Units.

To add a new Unit of Measure

1. Enter the new Unit of Measure in the box captioned **Material unit Description** (Max 15 Characters)
2. Click on the **Down Arrow** Button and it would be saved and displayed in the list box below the arrow button

To modify an existing Unit of Measure

1. **Locate the row** containing the Unit of Measure that needs modification
2. **Double Click** on the row
3. The description of the Unit of Measure would be displayed in the box captioned **Material Unit Description** (Max 15 Characters)
4. Make the desired modifications
5. Click on the **Down Arrow** Button and it would be saved and displayed in the list box below the arrow button

To delete an existing Unit of measure

1. **Locate the row** containing the Unit of Measure that needs modification
2. **Double Click** on the row
3. The description of the Unit of Measure would be displayed in the box captioned **Material Unit Description** (Max 15 Characters)
4. Click on the **X** button
5. A message would be displayed "**You are deleting** :" along with the description of the Unit of Measure
6. Clicking on the **Yes** button would cause the Unit of Measure to be deleted
7. Clicking on the **No** button would cancel the delete action

Preliminaries - Maintain Material Categories

MRPPal comes with a set of commonly used **Material Categories**. Please verify these and you may correct them to suit your specific environment as well as add new categories of materials. You may delete some categories of materials also.

These functions can be achieved by a person logged in as **Administrator** by clicking on the top **Tools** Menu and selecting the option **Maintain Material Categories**.

To add a new category of materials

1. Enter the new categories of materials in the box captioned **Material Category Description** (Max 15 Characters)
2. Click on the **Down Arrow** Button and it would be saved and displayed in the list box below the arrow button

To modify an existing category of materials

1. **Locate the row** containing the categories of materials that needs modification
2. **Double Click** on the row
3. The description of the categories of materials would be displayed in the box captioned **Material Category Description** (Max 15 Characters)
4. Make the desired modifications
5. Click on the **Down Arrow** Button and it would be saved and displayed in the list box below the arrow button

To delete an existing category of materials

1. **Locate the row** containing the category of materials that is to be deleted
2. **Double Click** on the row
3. The description of the category of materials would be displayed in the box captioned **Material Category Description** (Max 15 Characters)
4. Click on the **X** button
5. A message would be displayed "**You are deleting** :" along with the description of the category of materials
6. Clicking on the **Yes** button would cause the category of materials to be deleted
7. Clicking on the **No** button would cancel the delete action

Administration - User Management

Users of the system need to be entered so that they can be selected during usage of this system.

This facility can be used by a person logged in as **Administrator**. This can be accessed from top **Administration** Menu and selecting **User Management** Option. The following need to be entered -

1. **Employee Name** - up to a maximum of 50 characters
2. **Employee Id** - employee number
3. **User Id** - this is for multi-user version for logging into the system - can be up to **12** characters
4. **Password** - this is for multi-user version for logging into the system - can be up to **12** characters
5. **Role** - the role can be –
   a. **Administrator** - there should not be more than one – This role can perform administration functions like maintaining material units & categories, user management, projects etc.
   b. **Stores Staff** – this role can perform Inventory related functions - Material Master, Material Units, material Categories, , material Receipts & Issues
   c. **Purchase Staff** – this role can perform procurement related functions Vendor master, Purchase Orders etc
   d. **Purchase Manager** – a role that can authorize purchase orders or cancel them.
   e. **Production Staff** – this role can perform estimation, BoM maintenance etc.
   f. **Guest** – a role that can access all functions but without the right to modify or enter any info
6. Clicking on the **Down Arrow** button would save the employee details

Any number of employees can be entered into the system.

Modify an Employee Details

1. **Locate the row** containing the employee whose details need modification
2. **Double Click** on the row
3. Boxes will be filled with appropriate values
4. Make the desired modifications
5. Click on the **Down Arrow** Button and it would be saved and displayed in the list box below the arrow button

Delete a Employee Details

1. **Locate the row** containing the employee that is to be deleted
2. **Double Click** on the row
3. Boxes would be filled with appropriate values
4. Click on the **X** button

5. A message would be displayed **"You are deleting** :" along with the employee name
6. Clicking on the **Yes** button would cause the employee to be deleted
7. Clicking on the **No** button would cancel the delete action

Note on MRPPal security

MRPPal implements a "role based" security. That is the role of the user (assigned at the time of adding the user) decides the info that the user can modify. There is no role that can perform all the functions. The info that can be modified the Administrator role is also limited. The following roles are present in MRPPal –

1. Administrator
2. PO Staff
3. Purchase Manager
4. Stores Staff
5. Production Staff

The functions (permissible modification of info) for each role is given below.

Administrator Functions

These functions are allowed only by the **Administrator**.

1. Maintain Material Units
2. Maintain Material Categories
3. User Management
4. Setup – enter company info
5. Maintain project info
6. Maintain labels

Stores Staff functions

1. Maintenance of Material Master
2. Material Receipts
3. Material Issues

Purchase Staff Functions

1. Maintain Vendor Master
2. RFPs
3. Compile Quotations
4. Capture PO Recommendation
5. Raise Pos
6. Amend Pos
7. Material Reservations

Purchase Manager Functions

1. Authorize Pos
2. Cancel MPR Items
3. Cancel PO Items

Production Staff Functions

1. Raise MPRs
2. Maintain BOMs of products
3. Maintain BOMs of sub-assemblies
4. Effort and Cost Estimation

Accessible to all

All reports and stock enquiry facilities are accessible by any body whoever can log into the system. All screens are accessible to all those who can log into the system but the authority to modify the info contained therein is limited as given above based on the role assigned to them.

Security by function

1. Vendor Master – only PO staff can modify/new/delete items
2. BOM & Sub Assembly BOM – only production staff is authorized
3. Enquiry & Reserve Material – Only PO Staff can make reservation. Any body can use the enquiry facility
4. Material Issues – Only Stores Staff is authorized to make material issues. Any body can check availability
5. Material Receipts - Only Stores Staff is authorized is to receive materials
6. Maintain Material Master - Only Stores Staff is authorized
7. Raise MPR - Only Production Staff is authorized to raise MPRs
8. Cancel MPR Items – Only Purchase Manager is authorized to cancel MPR Items
9. Capture PO Recommendation – Only Purchase Staff can capture the PO recommendation
10. PO Amendment – PO Staff can amend a PO – all others can not amend a PO
11. PO Cancel – Only Purchase Manager can cancel a PO
12. PO Placement – Purchase staff can prepare a PO – that is select Items for a PO and save the PO recommendation. Purchase Manager only can authorize placement of PO
13. Compile Quotations – only Purchase Staff is authorized to compile the quotations received
14. Material Reservation – only Purchase Staff and Purchase Manager is authorized to make reservation of materials
15. Material Returns – only Stores Staff is authorized to take material returns
16. Raise RFP – only Purchase Staff is authorized to raise RFPs
17. Cancel RFP Items – only Purchase Staff is authorized to cancel RFP items
18. Estimation – Effort & Cost – only Production Staff can carry out these activities

Administration – Projects

Project needs to be defined so that material consumption can be tracked on project basis.

This facility can be accessed by **Administrator** from the top **Administration** menu and selecting **Projects** option.

The following info is mandatory

1. **Project ID** - short identification of the project- up to a maximum of 20 characters
2. **Project Name** - name of the project - up to a maximum of 50 characters

The following info is optionally entered.

1. **Address** - two lines each of 50 characters
2. **City/Town** - 50 characters
3. **State** - 50 characters
4. **ZIP** - Postal Code (PIN in India, ZIP in USA) - 10 digits maximum
5. **Email id** - - 50 characters
6. **Web site URL** - 50 characters
7. **Country Code** - for phone number - maximum 15 digits
8. **Main Phone No** - primary phone number for contact - up to 50 characters, you can enter more than one number
9. **FAX** - up to 50 characters
10. **Mobile phone** - mobile phone number for contact - up to 50 characters, you can enter more than one number
11. **Updated on** - to indicate the concurrency of the details - select the appropriate date
12. **Additional Info** - any additional info - up to 255 characters

Clicking on the **Save** button would save the details and include them in the list box.

Modify a Project Details

1. **Locate the row** containing the Project whose details need modification
2. **Double Click** on the row
3. Boxes will be filled with appropriate values
4. Make the desired modifications
5. Click on the **Save** Button and it would be saved and displayed in the list box below the arrow button

Administration - Maintain Labels

This facility is provided to make using **MRPPal** a more friendly and familiar experience. Some naming practices differ widely, for example, a request form for material issue is called **MIR** - meaning Material Issue Requisition - it is called differently in different organizations. So **MRPPal** identified eleven such nomenclatures, which may not be used in organizations and made arrangements so that they can be modified to more familiar terms.

There is one limitation - the new nomenclature cannot have more number of characters than the old nomenclature.

This facility can be accessed by **Administrator** from top **Administration** menu and selecting **Maintain Labels**. The corresponding screen would be displayed for you.

To change any nomenclature, you can **double click** the row containing that nomenclature under the column **Old Label**. This causes the old label to be displayed in the box captioned **Existing Nomenclature** and new label if any, would be displayed in the box captioned **New Nomenclature**. You can make desired modifications in the box captioned **New Nomenclature** and click the **down arrow** button to save it. It will appear in the list box under the heading **New Label**.

Thus, you may modify the nomenclature of all the allowed items to your desire.

A note on Procurement Functionality

Before we go into details of procurement functionality we need to note the following aspects so that we have a better understanding of how **MRPPal** handles Procurement.

MRPPal recognizes that the process of procurement varies from organization to organization and avers here that **customer-specific customization** is possible and would carry it out at no extra cost to the customer (Conditions do apply) in most cases.

Workflow

1. Procurement activity starts with an MPR (Material Procurement Requisition). This is to be raised by persons with the role of Production Staff. A question may arise as to why this is necessary as BoMs are within the system and Material Bottlenecks report is already available with Purchase Staff (or for that matter whosoever is interested). Very true! But consider the following scenarios –
   a. While BoM gives the production quantities, the requirement of Production Spares as well as the spares to be supplied along with the equipment would be known only to the person handling the project
   b. If the Material Bottlenecks report triggers procurement action, it may result in procuring the material too early and thus locking up valuable capital. The person handling the project is the best person to initiate the procurement action depending on the procurement cycle time. Some items have a longer cycle and some have a shorter cycle. Therefore, the person handling the project is the best person to initiate the procurement action
2. MPR is followed by **RFP** (Request for Proposal) or an enquiry for supply of material.
   a. An RFP is raised by the **Purchase Staff**
   b. An RFP can contain items from different MPRs
   c. If an MPR Item is cancelled before RFP is raised, then that item would not included in the list of items for which RFP is pending
   d. If an MPR Item needs to be cancelled after an RFP is raised, RFP item is to be cancelled. It is no longer possible to cancel MPR Items after RFP is raised.
3. RFP is followed by receipt of quotes from prospective vendors – these may be received over email, phone or a letter. **Quotes are compiled** as the next step to RFP
4. After Quotes are compiled, they are compared by **Purchase staff** in consultation with the person who raised the MPR and the **PO recommendation is captured**. We feel that scrutiny of quotes/offers is to be carried out offline as it involves study of technical specifications, technical/commercial terms and conditions and support etc and it is not envisaged to automate the process of finalizing the purchase recommendation.
5. The next step is raising the PO by Purchase Staff. A purchase order may contain items from various RFPs but must be placed on only one vendor.
6. The Purchase Order process is complete with authorizing the PO by Purchase Manager.
7. A PO can be amended by raising a **PO Amendment**

8. A PO can also be **cancelled**
9. Receipt of material is covered in **Inventory Functions**

The following precautions are built into the Procurement Functionality

1. The quantity for an RFP is automatically computed from the quantities of the MPRs included in the RFP
2. While placing orders on multiple vendors is facilitated for a single item, the quantity is restricted to the RFP quantity
3. Authorizing a PO and canceling PO Items is permitted only for the role of Purchase Manager

Material Reservation is permitted to ensure that certain material is not issued for purposes other than, for which it was procured.

Vendor Master

This facilitates adding / modifying / deleting Vendors from the **Vendor Master**.

This can be accessed by **Purchase Staff** from the top **File Menu – Masters** and selecting **Vendor Master** option

Vendor Master screen has two tabs, namely,

1. **Vendor Details**
2. **Map Vendor to Materials**

Vendor Details Tab

The entries are explained below.

1. **Vendor Name** - maximum length - 50 characters - the name of the vendor
2. **Address** - two lines and in each line - you can enter up to 100 characters
3. **City / Town** - you can enter up to 50 characters
4. **State** - you can enter up to 50 characters
5. **Zip** - Postal Code - you can enter up to 6 digits here
6. **Email Id** - email id of the vendor - you can enter up to 50 characters
7. **Web Site URL** - Web Site URL or address of the vendor - you can enter up to 50 characters
8. **Country Code** - for phone number - you may enter the appropriate number
9. **Main Phone Number** - Main contact phone number of the vendor - you may enter appropriately
10. **FAX** - FAX number of the Vendor - you may enter appropriately
11. **Mobile Phone** - you may enter here the mobile number, if any of the vendor or you may enter the secondary phone number of the vendor
12. **Updated on** - select the date on which the info is modified
13. **Additional Info** - You can enter any relevant info up to 255 characters
14. Clicking on the **Down Arrow** button would save the info and list it in the list box below the arrow button

To modify an existing vendor details

1. **Locate the row** containing the vendor whose details need modification
2. **Double Click** on the row
3. Boxes will be filled with appropriate values
4. Make the desired modifications
5. Click on the **Down Arrow** Button and it would be saved and displayed in the list box below the arrow button

To delete an existing vendor details

1. **Locate the row** containing the vendor that is to be deleted
2. **Double Click** on the row
3. Boxes would be filled with appropriate values

4. Click on the **X** button
5. A message would be displayed "**You are deleting** :" along with the vendor name
6. Clicking on the **Yes** button would cause the vendor to be deleted
7. Clicking on the **No** button would cancel the delete action

Map Vendor to Materials Tab

This tabs assists in mapping vendors to the materials they supply. This mapping would assist in selecting vendors while sending RFPs/Enquiries. Vendors can be mapped to materials at two levels, namely,

1. **Material Category**
2. **Material Code or specific material**

Follow the below steps to map vendors to materials

1. Select the material category from the box captioned **Material Category**. If you do not find an appropriate category, please get it added by your Administrator
2. Select the Material Code from the box captioned **Material Code**. This will cause the box captioned **Material Description** to be filled in automatically. To find out appropriate material code you may use **Stock Enquiry** facility which will assist you in finding out material code from material description
3. Clicking on **down arrow** button would save the mapping and it would be saved and displayed in the list box below the arrow button

To modify an existing mapping

1. **Locate the row** containing the mapping that needs modification
2. **Double Click** on the row
3. Boxes will be filled with appropriate values
4. Make the desired modifications
5. Click on the **Down Arrow** Button and it would be saved and displayed in the list box below the arrow button

To delete an existing mapping

1. **Locate the row** containing the mapping that is to be deleted
2. **Double Click** on the row
3. Boxes would be filled with appropriate values
4. Click on the **X** button
5. A message would be displayed " **Do you wish to delete the selected item?**:"
6. Clicking on the **Yes** button would cause the mapping to be deleted
7. Clicking on the **No** button would cancel the delete action

MPR – Material Procurement Requisition

This facility can be accessed by **Production Staff** from top **Materials Management – Procurement Functions – Material Procurement Requisition** menu and selecting the option **Raise MPR**.

This screen consists of two sections and one list box. The list box would contain the list of items included in the selected. MPR The sections are –

1. **MPR Details**
2. **MPR item Details**

MPR Details Section

The following information needs to be entered –

1. **MPR Id** – enter an identification for the MPR being raised or select the one available in the box captioned **MPR Id –** Maximum 50 characters
2. Select the relevant Project Name from the box captioned **Project Name**
3. Select appropriate date from the box captioned **MPR Raised on**
4. Select appropriate date from the box captioned **Items Required By**
5. Enter the name of person who will be the contact point on matters regarding this MPR from the box captioned **Contact Person** - Maximum 50 characters.

This info needs to be entered once. Now you are ready to enter the items to be included in the MPR. The following details need to be entered –

1. Material Category – select appropriate category from the box captioned as **Material Category**. This will assist the **Purchase Staff** in identifying suitable vendors. If you need a new category, contact the Administrator to create a new category.
2. Select the Material Code from the box captioned **Material Code**. You can use the **Stock Enquiry** screen to find out the material code if you do not already know. If the material code does not exist, select **New**.
3. If you have selected an existing material code the box captioned **Material Description** would automatically be filled. If you have selected New in the Material Code box, then you need to fill in the material description – up to a maximum of 255 characters.
4. Enter the required quantity in the box captioned **Required Quantity**.
5. Enter the approximate unit rate per item, if you know in the box captioned **Rate per Unit (Approx)**
6. Click on the **Down Arrow** button to save the item.
7. You may enter as many items as necessary to the MPR

To modify the details of an item

1. **Locate the row** containing the vendor whose details need modification
2. **Double Click** on the row
3. Boxes will be filled with appropriate values

4. Make the desired modifications
5. Click on the **Down Arrow** Button and it would be saved and displayed in the list box below the arrow button

To delete an item details

1. **Locate the row** containing the vendor that is to be deleted
2. **Double Click** on the row
3. Boxes would be filled with appropriate values
4. Click on the **X** button
5. A message would be displayed "**Do You wish to delete the selected item?**"
6. Clicking on the **Yes** button would cause the vendor to be deleted
7. Clicking on the **No** button would cancel the delete action

Cancel MPR Items

This facility can be accessed by **Production Staff** from top **Materials Management – Procurement Functions – Material Procurement Requisition** menu and selecting the option **Cancel MPR Items**.

Once an MPR has been raised, cancellation of items therein is permitted albeit only by the **Production Staff**. Please note that -

1. A person can cancel items of those MPRs that were raised by the same person – this is determined by the **Userid** used during the login time
2. If an MPR Item is cancelled **before RFP is raised**, then that item would not included in the list of items for which RFP is pending
3. If an MPR Item needs to be cancelled after **an RFP is raised**, then RFP Item needs to be cancelled. It is no longer possible to cancel MPR Items after corresponding RFP is raised.

This facility can be accessed by **Production Staff** from top **Materials Management – Procurement Functions – Material Procurement Requisition** menu and selecting the option **Cancel MPR Items**.

The following steps are to be followed for canceling items froma raised MPR –

1. Select the desired MPR from the box captioned as **MPR Id**. Please note that this box will contain only those MPRs that are raised by you (by **Login Userid**)
2. This will cause the list at the bottom of the screen to be filled with Items for which RFP has not yet been raised
3. **Select** the item that needs to be cancelled by **double clicking on the row**
4. Click on **Cancel Item** button - it will display a message – "**Do you wish to cancel the selected Item?**"
5. Click on **Yes** button to cancel the item
6. Clicking on **No** button would cancel the delete action.

You may repeat this as many times as is necessary

Raise an RFP

This facility can be accessed by **Purchase Staff** from top **Materials Management – Procurement Functions – RFP/Enquiry** menu and selecting the option **Raise RFP/Enquiry** option.

It is possible to include items from multiple MPRs into one RFP. The following steps are to be followed for raising an RFP

1. Enter RFP id or Select an RFP from the box captioned **RFP/Enquiry Id**
2. Select an MPR for inclusion in the RFP by selecting an MPR id from the box captioned **Select MPRs to be included in the RFP** and click the **right arrow** button located besides the same box. This will move the selected MPR into the list box located besides the button and also load the list box captioned **List of Items from the Selected MPRs**
3. Select as many MPRs as desired by repeating step 2
4. Move the items from the box captioned **List of Items from the Selected MPRs** into box captioned List of Items **Selected items to be included in RFP** by highlighting the row and clicking on the **Select Items to be Included in the RFP** button. The items in this box would be included in the RFP being raised
5. As you move items into box captioned **Selected items to be included in RFP,** the box captioned **List of Existing Vendors** would be filled. If you need a new vendor, please get it included in **the Vendor Master**
6. Select vendors to whom you propose to send RFPs by highlighting the row containing the desired vendor and clicking the **right arrow** button located besides the box captioned **List of Existing Vendors**. This will move the selected vendors into the box captioned **Vendors Selected for the RFP**
7. Now you are ready for raising the RFP – you can accomplish this by clicking the **Save RFP** button. Until you perform this action, the RFP would not be saved.
8. You can print out the RFP by clicking the **Print RFP** button

Cancel RFP Items

Cancellation of RFP items is permitted. Please note the limitations –

1. If the RFP items are cancelled **before receiving quotes**, the cancelled items will not be shown in the **Compile Quotations** Screen
2. If the RFP items are cancelled **after receiving quotes** and compiling the quotations but before capturing the PO Recommendation, the cancelled items will not be shown in the **Capture PO Recommendation** Screen
3. If the RFP items are cancelled **after capturing the PO recommendation**, there is **no safeguard from the system**. **Manual care has to be taken** to ensure that PO is not placed for cancelled items.

The following steps are to be performed to cancel RFP Items

1. Select the desired RFP Id from which items need to be cancelled from the box captioned **RFP/Enquiry Id**. This will cause the items included in the selected RFP to be listed in the list box below the boxes.

2. **Locate the row** containing the item to be cancelled and **double click** on the row. This causes the boxes above the list box to be filled with appropriate values
3. Click on the **Cancel RFP Item** button to cancel the item
4. It will display a message "**Do you wish to cancel the selected item?**"
5. Clicking on **Yes** button would cause the item to be cancelled
6. Clicking on **No** button would cancel the action

Compile Quotations

This facility can be accessed by **Purchase Staff** from top **Materials Management – Procurement Functions – Compile Quotations** menu.

This screen facilitates capturing the proposals (quotations) received from prospective vendors into the system. The following steps need to be followed –

1. Select the desired RFP from the box captioned **RFP/Enquiry Id** – this causes the list box captioned **Items in the RFP/Enquiry** to be filled with the items that were included in the selected RFP
2. Select the desired item for which the quotations are to be compiled by **double clicking on the row** containing the item. This causes the boxes below the list box captioned **Items in the RFP/Enquiry** to be filled with appropriate values – for your reference to ensure that you are capturing quotations for the right item
3. Verify the material description in the box captioned **Material Description** and correct it to match the description given in the quotation
4. Select the vendor from the box captioned **Vendor**
5. Enter the document reference of the vendor quotation in the box captioned **Quote Ref** – maximum 50 characters
6. Enter the date on the quotation by selecting the appropriate date from the box **Dated** – located besides the **Quote Ref** box
7. Enter the promised delivery date by selecting appropriate date from the box captioned **Delivery Date**
8. Enter the offered quantity in the box captioned **Offered Qty**
9. Enter the unit price in the box captioned **Unit Price**
10. Enter excise/customs duty in the box captioned **Excise/Customs Duty** – enter percentage on the unit price
11. Enter the any Sales Tax or Value Added Tax in the box captioned **CST/VAT Tax** – enter percentage on the unit price
12. Enter the Insurance in the box captioned **Insurance** – enter amount – not percentage
13. Enter the amount charged towards freight in the box captioned **Freight** – enter amount – not percentage
14. If there is any other tax that was levied, then enter the name of the tax in the box captioned **Any Other Tax** or you may select an existing name from the same box. Then enter the tax percentage in the box captioned **Other Tax %age**
15. Clicking on **Save Quote** button would save the quote. This will cause the quotation to be included in the list box captioned **Quotes Received**

You may capture as many quotations (proposals) as necessary.

If there are errors in the capturing and you wish to correct, **double click** on the row containing the item for which corrections are necessary. This causes the boxes to be filled with appropriate values. Make desired corrections and click on **Save Quote** button to save the changes made.

Capture PO Recommendation

This facility can be accessed by **Purchase Staff** from top **Materials Management – Procurement Functions – Capture PO Recommendation** menu.

To capture PO Recommendation, follow the below steps –

1. As the screen is displayed, the box captioned **RFP/Enquiry Id** is filled with RFP numbers which items are pending for placing purchase order. Select an RFP Id from the box
2. This will cause the box captioned **Vendor** to be filled with the names of vendors who had responded to the RFP. Select the desired vendor from this box
3. This will cause the list box captioned **Items Offered by Selected Vendor** would be filled with details of Quotes offered by the Vendor shown in box captioned **Vendor**. The list box would contain items for which purchase order is not yet placed
4. You may select different vendors and see their respective offers
5. To include an item in the purchase order, **highlight the row** containing the item and click on the **Select Items for PO** button and the item would be transferred into the list box captioned **Items Included in the PO**. Please note the following
   a. For any single item recommended quantity would not be allowed to be more than the RFP quantity
   b. Multiple PO recommendations are allowed for a single RFP item with the condition that the total quantity recommended is less than or equal to the RFP quantity
   c. When the recommended quantity is more than the RFP, quantity, a message will be displayed stating, "**Recommended quantity is more than RFP/Enquiry Quantity**. " along with quantities of RFP, Recommended and allowed quantity and a box for entering the new recommended quantity captioned **Recommended Quantity** would be displayed. The quantity entered would be included in the PO items
6. Repeating the above steps, you may capture as many recommendations as necessary.
7. Clicking on **Save Po Recommendation** button would save the recommendations.
8. Please note that capturing recommendations would not result in raising Pos. You need to carry out **Raise PO** functionality for actually placing a PO

Purchase Orders

This facility can be accessed by **Purchase Staff** from top **Materials Management – Procurement Functions - Purchase Orders** menu and selecting the option **Raise POs**.

Once you select this option, **Purchase Orders** screen would be displayed. This screen consists of two tabs, namely,

1. **Select PO Items**
2. **Authorize & Freeze PO**

In this you will find two list boxes, captioned –

1. **Items Recommended for PO** – this list consists of items for which PO recommendation is captured but PO is not yet placed.
2. **PO Items** – this list consists of items selected for inclusion in the PO being raised

Select PO Items Tab

The actions in this tab can be performed by **Purchase Staff**. The following steps need to be followed for raising a PO

1. Enter a PO number or select an existing PO number from the box captioned **PO No**
2. Select PO Type from the box captioned PO Type – three types of PO are available, namely,
   a. **Normal PO** – this type indicates a one-time PO which follows normal purchase process and is issued to the selected vendor
   b. **Cash Purchase** – this type indicates material purchased against cash – this purchase order is for record purposes only and may not be issued t the vendor
   c. **Open PO** – this type indicates that a PO is issued only once and material may be received recurrently
3. Locate the row containing the item desired for inclusion in the PO and click on **Select Items for PO** button. This will cause the item to be included in the list captioned as **PO items**
4. As a PO can be on one vendor, please ensure that you do not select items recommended for different vendors in the same PO. Should it happen that you selected an item that has a different vendor, a message to that effect would be given and the item would not be included in the PO items
5. Select as many items as necessary and once you are sure that all the possible items are selected for the PO, click on **Save PO Recommendation**. This will save the PO
6. Thus you may raise as many Pos as necessary. But a PO is not complete until it is authorized by **Purchase Manager** in the other tab.
7. If you wish to delete an item erroneously selected for inclusion in the PO, you can delete it by selecting the item in the **PO Items** list and clicking **Remove from**

PO Items button. Please note that there is no facility to delete an item once the PO is authorized – it needs to go thru PO Amendment.

Authorize & Freeze PO tab

This action can be performed only by **Purchase Manager**. The following steps are to be followed –

1. The box captioned **PO No** would contain al the PO numbers that have been finalized by **Purchase Staff** but not frozen yet. Select the desired PO from this list
2. The list at the bottom would contain all the items included in the PO
3. **Double click** on any item and the boxes would be filled with relevant details – this action enables verification of the details for any item
4. Once satisfied, click on **Authorize this PO?** Button and the authorization would be saved

This action can be performed as necessary.

Print the Purchase Order

Printing the PO Amendment may be achieved thru **File-Reports-Procurement Reports** Menu and selecting the **Purchase Order** report therein.

Amend Purchase Orders

MRPPal recognizes that often it becomes necessary to amend a PO to modify quantity or price or a tax rate. Therefore the functionality to amend a PO is provided.

This facility can be accessed by **Purchase Staff** from top **Materials Management – Procurement Functions - Purchase Orders** menu and selecting the option **Amend POs**.

Amendment **of Vendor, Material Code, and Material Description** is not permitted. All other details can be amended.

The below steps may be followed to amend a PO.

1. Select a PO Number from the box captioned **PO Number**
2. This would cause the list box located at the bottom of the screen to be filled with items that are included in the PO as well as the vendor name and PO date to be filled in the appropriate boxes
3. **Locate the row** in which the item to be amended and **double click** on it
4. This causes the boxes above the list box to be filled with appropriate values.
5. Make the desired amendments and click on **Amend PO Item** button. This will cause the amendment to be saved.

Print the PO amendment

Printing the PO Amendment may be achieved thru **File-Reports-Procurement Reports** Menu and selecting the **PO Amendment** report therein.

Cancel PO Items

MRPPal recognizes that often it becomes necessary to cancel a PO items for various reasons. Therefore the functionality to cancel PO items is provided. However, recognizing the sensitivity involved, this function can be performed only by **Purchase Manager**.

This facility can be accessed by **Purchase Manager** from top **Materials Management – Procurement Functions - Purchase Orders** menu and selecting the option **Cancel PO Items**.

The below given steps may be followed to cancel items of a PO –

The below steps may be followed to amend a PO.

1. Select a PO Number from the box captioned **PO Number**
2. This would cause the list box located at the bottom of the screen to be filled with items that are included in the PO as well as the vendor name and PO date to be filled in the appropriate boxes
3. **Locate the row** in which the item to be cancelled and **double click** on it
4. This causes the boxes above the list box to be filled with appropriate values.
5. Make the desired amendments and click on **Cancel This PO Item?** button. This will cause the cancellation to be saved.

Print the Cancel PO Items

Printing the PO cancellation may be achieved thru **File-Reports-Procurement Reports** Menu and selecting the **Cancel PO Items** report therein.

Procurement Reports

This facility can be accessed from top File-Reports-Procurement Reports Menu. All reports once displayed can be either printed on an installed printer or exported to a disk file in a variety of formats.

The following reports are possible

1. **Purchase Order** – this report displays the Purchase Order for a selected PO number
2. **PO Amendment** – this report displays the Purchase Order Amendment for a selected PO number, if there are any amendments made in that PO
3. **Cancel PO Items** – this report displays the Purchase Order items Cancellation for a selected PO number, if there are any cancellations made in that PO
4. **Open Pos** – this report gives a list of Pos that are yet to be closed
5. **PO Receipts** – this reports lists the various receipts against a selected Purchase Order
6. **Funds Requirement** – This report gives the requirement of cash (funds) in a selected period to meet the obligations based on the delivery commitments given in the Pos
7. **MPR List** – this report gives the list of MPRs raised in a selected period
8. **MPRs Cancelled** – this report gives a list of MPR Itesm cancelled
9. **MPRs Completed** – this report gives a report all MPRs that are completed
10. **RFP List** - this report gives the list of RFPs raised in a selected period
11. **MPRs Pending** - this report gives a list of MPRs for which RFP action is still not taken
12. **RFPs Waiting for Quotes** - this report gives a list of RFPs for which quotes are yet to be received
13. **Pending PO Recommendations** – this report gives a list of
14. **Vendor Receipts Report** – this list gives for a selected vendor all the material receipts within a selected period

For generating the reports –

1. Select the desired report from the box captioned Type of Report
2. When necessary give the following details
   a. PO Number in the box captioned **Purchase Order**
   b. Select the desired period from the frame captioned **Select Dates**
   c. Select Vendor from Box captioned **Name of Vendor**

Material Reservations

Reserving material for a specific project sometimes becomes necessary due to reasons like –

1. A material that fits the same material code may come with slightly different cosmetic specifications like color, shape etc. Then reservation helps controlling issue of right material to the right project
2. Reservation is one way to ensure availability of materials which are procured in bulk and controlled thru re-order level monitoring
3. Reservation also ensures that a critical material procured for a project is not issued unintentionally to another less-critical project

MRPPal recognizes this need and provides for reservation facility in a simple manner. This can be performed by **Purchase Staff** only.

This facility can be accessed from top **Material Management-Procurement Functions-Material Reservation**.

The material reservation consists of two lists, namely,

1. The list near the top captioned **Material Available for Reservation** – contains the material in the warehouse, arranged by the **GRR** (Goods Receipts Register) number and the quantity shown is net of reservations, if any already existing
2. The list near the bottom of the screen, captioned **Material Already Reserved for the Project** – shows the material already reserved for the project shown in the box captioned **Name of Project**

The following steps may be followed for reserving material for a project.

1. Select appropriate material by **locating the row** in which the material is shown
2. **Double Click** on the row. This causes the boxes captioned **Material Code, Material Description, Qty to be Reserved** and **GRR No** to filled with appropriate values
3. Verify the quantity to be reserved in the box captioned **Qty to be Reserved** and enter proper quantity
4. Once you are ready and sure, click on the **Reserve** button.
5. You will be shown a **confirmatory message**. Clicking on **Yes** button would reserve the material and show it in the list captioned Material Already Reserved for the Project. Clicking on **No** button would cancel the reserve action.

The above actions can be performed as many times as necessary

A note on Warehouse Management

Warehouse management is more concerned with safekeeping of materials, preventing expiry and damage, making them available on time to those who require material and striking a fine balance between the costs of inventory cost and stock-out cost. A software tool can only assist in the information management of warehouse. MRPPal precisely focuses on this aspect.

MRPPal provides for information capture thru material receipts and issues as well as material returns (Material issued by the warehouse but returned back into the stock) and retrieves info from Purchase Orders from Procurement module.

It generates a host of reports that give value of the stock in different formats such as –

1. Priced Stores Ledger – detailed and summary
2. Consumption reports – by project, category, material code

Reports that assist inventory control such as –

1. HML (High, Medium & Low cost materials) report
2. VED (Vital, Essential and Desirable materials) report
3. IIL (Imported, Indigenous and Local materials) report
4. Expiry Report
5. Below re-order level report
6. Fast and Slow Moving report
7. Taxes paid report

And other reports necessary for the warehouse.

Warehouse Management is achieved thru Inventory Functions, namely,

1. Material Receipts
2. Material Issues
3. Material Returns

These are explained in greater detail in the following sections

Material Master

This facilitates adding / modifying / deleting materials from the **Material Master**. This can be maintained by **Stores Staff** only.

This can be accessed from the top Materials **File** – **Masters** and selecting **Maintain Material** Master option

The entries are explained below.

1. **Material Code** - maximum length - 20 characters - as per your material codification policy
2. **Material Description** - you can enter the material description up to 255 characters
3. **Units** - select any one Unit of Measure available in the box. If you need a new Unit of Measure, you can do so from the **Tools** menu and selecting the option **Maintain Material Units**.
4. **Re-order Level, Order Quantity, and Safety Stock Quantity** - if your organization is using the **EOQ** (Economic Order Quantity) and if it is applicable to this material, you may enter these quantities as applicable according to your organizational policy.
5. **Material Category** - select appropriate **Material Category** from the list of choices available in the box. If you need a new **Material Category**, you can do so from the **Tools** menu and selecting the option **Maintain Material Categories**.
6. **Spares Classification** - if your organization is following **VED** (Vital, Essential, and Desirable) categorization of spare parts, select the appropriate choice. For materials, select **Not a Spare Part** option from the list of choices available in the box
7. **Source Classification** - this indicates the source of procurement, namely, Imported, Indigenous or Local. Please select the appropriate choice.
8. **Opening Balance Quantity** - this is useful when you are first entering material master initially. Enter the existing quantity, if any
9. **Opening Value** - this is useful when you are first entering material master initially. Enter the value of existing quantity, if any
10. **Location** – Location within the warehouse where the material is stored - this is useful when you are first entering material master initially. Enter the location of existing quantity, if any
11. Clicking on the **Down Arrow** button would save the material and list it in the list box below the arrow button

To modify an existing material

1. **Locate the row** containing the material that needs modification
2. **Double Click** on the row
3. Boxes will be filled with appropriate values
4. Make the desired modifications
5. Click on the **Down Arrow** Button and it would be saved and displayed in the list box below the arrow button

To delete an existing material

1. **Locate the row** containing the material that is to be deleted
2. **Double Click** on the row
3. Boxes would be filled with appropriate values
4. Click on the **X** button
5. A message would be displayed "**You are deleting** :" along with the material code
6. Clicking on the **Yes** button would cause the material to be deleted
7. Clicking on the **No** button would cancel the delete action

Material Receipts

Please note that material receipts function can be performed only after PO details are entered.

This facilitates receipt of material. It can be accessed from the top **Materials Management- Inventory Functions** Menu and selecting **Material Receipts** option. This causes Material Receipts Screen to be displayed.

This screen has two sections, namely -

1. **Po Details** Section and
2. **Item Details** Section

In **Po Details** Section, select the appropriate **PO Number** from the choices available. **Po Date** and **Vendor** name would automatically be filled in the appropriate boxes.

In **Item details** Section -

The following need to be entered -

1. **GRR No** - Goods Receipt Register Number - This needs to be entered - up to a maximum of 25 Characters This needs to be unique for each item. GRR Nos cannot be duplicated even if the year is different.
2. **Material Code** - select appropriate material code from the available choices
3. **Units** - will be automatically displayed when you select the Material Code
4. **Receipt Date** - select the appropriate date
5. **Qty Received** - Quantity Received - enter the received quantity
6. **Accepted Quantity** - enter this whenever the inspection of inward material is completed. **Please note** that unless this field is entered, material would not be shown in the stock.
7. **Item Rate** is displayed from the PO, but this can be changed, if necessary
8. **Excise Duty, Sales/VAT Tax, Customs Duty, Octroi** - may be entered as necessary. Please enter percentages (not amounts) of Item Rate
9. **Any Other Tax** - there may be some tax, which is not covered by any of the above taxes, and the description of such tax may be entered here. Also, you may select from the choices available.
10. **Other Tax Amount** - enter the **percentage** of tax (based on Item Rate) described in Any Other Tax. Enter percentage (not amount)
11. **Storage Location** - the location where the material is stored - this can be entered after physically storing the material. This can be up to a maximum of 20 characters
12. Click on **Down Arrow** Button to save the received Item. The item will be added to the list box below the buttons.
13. You can enter as many items as necessary

Modify a received Item Details

1. Locate the row containing the item whose details need modification
2. Double Click on the row
3. Boxes will be filled with appropriate values
4. Make the desired modifications
5. Click on the Down Arrow Button and it would be saved and displayed in the list box below the arrow button

Delete a received Item Details

1. Locate the row containing the item that is to be deleted
2. Double Click on the row
3. Boxes would be filled with appropriate values
4. Click on the X button
5. A message would be displayed "You are deleting :" along with the GRR No
6. Clicking on the Yes button would cause the item to be deleted
7. Clicking on the No button would cancel the delete action

Please note that each item needs to have a unique GRR no and that GRR Nos cannot be duplicated – even if the year of receipt is different. This is because MRPPal uses FIFO (First In First Out) method of valuation of inventory. Please use some differentiator. For example if you have received multiple items in one delivery, please suffix a letter or a number to the GRR No – example

➢ Let us assume that you received three items in one delivery and you would like to use Abc01 – now use these GRR Nos for each item
  i. Abc01a
  ii. Abc01b
  iii. Abc01c
➢ Alternatively, you may also use –
  i. Abc01-1
  ii. Abc01-2
  iii. Abc01-3

You may use your own method of differentiating, but ensure that each item has a unique GRR NO.

Material Issues

This facility can be accessed thru top **Materials Management – Inventory Functions** Menu and selecting **Material Issues** option. This would facilitate recording material issues. This function can be performed by **Stores Staff**. All others can check the availability of material.

The following are the steps in issuing the material issues

1. **MIR Details**
   a. **MIR No** - Material issue Requisition/Request Number - enter the number up to a maximum of 20 characters
   b. **MIR Date** - select appropriate date
   c. **Project Name** - select the project name - this will help in computing project-wise material consumption cost
2. **Item Details**
   a. **Material Code** - select the appropriate code and the details of **Units** and **Material Description** would be automatically displayed
   b. **Quantity Requested** - enter the quantity requested
3. Now click on **Check Availability** button - this will give the stock position
   a. The list box below **Material Description** box will be filled with the details of
      i. **Sl No**
      ii. **GRR No**
      iii. **Qty Available**
      iv. **Location**
   b. These will be displayed in the order of receipt
4. **Issue material**
   a. If the available quantity, including all the GRR Nos, is **insufficient** to cover the entire Requested Quantity,
      i. You may reject the item for issue and move to the next item or Issue the available quantity
   b. If the available quantity (combined total of material receipts) is **enough** to cover the Requested Quantity, you may proceed to issue the material.
   c. **To issue material**,
      i. Enter the quantity issued in the box captioned **Qty Issued**
      ii. Select the name of the employee to whom material is being issued from the box captioned **Issued To**
      iii. Select appropriate date of issue from the box captioned **Date issued**
      iv. Click on the button captioned **Issue Material**
      v. The balances will be adjusted and the material would be added to the list box captioned **List of Material Issued**
   d. **MRPPal** issues on a **FIFO** (First In First Out) basis. So the earliest received material will be issued first. This may please be noted
5. You may issue as many items as necessary against the **MIR**.
6. Once an MIR is finished, you can take another MIR.

Please note that there is **no facility to delete** items after clicking the button **Issue Material**. If a mistake is made and you would like to correct it use the **Material Returns** function.

Stock Enquiry & Reservation

This facility can be accessed from top **Materials Management** and selecting **Stock Enquiry** option

This facilitates locating a material code and finding its stock position. The search is based on a key word. The search is as follows -

1. Based on the first key word entered in the box captioned **Enter one Key Word to Search** and click **Search** button, the database is searched and all matching data is loaded into the list box captioned **Material List**
2. To narrow down the search, please enter another key word in the box **Enter one Key Word to Search** and click **Search** button. This will search only the items contained in the list box and list only those items that matched the second key word.
3. Repeat step two until you find the desired material
4. **Double click** on the row containing the desired material. This will cause box captioned **Material Code** to be filled with the Material Code of the selected material and the box captioned **Quantity in Stock** to be filled with the quantity available in the stores.
5. If you already know the Material Code, then you can select the appropriate material code in the box captioned **Material Code** and the available quantity would be displayed in the box captioned **Quantity** in Stock and the stock on order would be displayed in the box captioned as Stock on Order

Tip - to clear the list box, empty the box captioned **Enter one Key Word to Search** and click **Search** button - it will clear the list box.

You can also make use this screen to make reservation of materials against projects. However, only **Purchase Staff** can effect reservations, all others can check the materials already reserved against any given project.

The following steps need to be taken to effect reservation –

1. Select a project from the box captioned **Name of Project** – this would cause the list box captioned **Reservation Details** to be filled with materials already reserved for the selected project, if any
2. Following the steps given for stock enquiry above, narrow down on the desired material.
3. Locate the row in the list box captioned **Material List** which contains the desired material and **double click** on the row
4. This causes the list box captioned **Stock Details** to be filled with all available material with details of **Serial Number, GRR No, Quantity Available** and **Location** of storage. This box would be blank if there are no materials available that can be reserved for the project
5. Select the desired material based on the **GRR No** by **double clicking** on the row (in the list box captioned **Stock Details)** containing the desired material.

6. This would cause the boxes captioned **GRR No** and **Qty to be Reserved** would be filled with appropriate details.
7. Enter the quantity to be reserved in the box captioned **Qty to be Reserved**
8. Verify and ensure that the values contained in the boxes captioned **Name of Project, Qty to be Reserved** and **GRR No** are the right ones and then click on **Reserve** button
9. This causes the material as specified would be reserved against the project and would be displayed in the list box captioned **Reservation Details**

Note that this is an additional facility in addition to **Material Reservation** available in **Procurement Functions**

Material Returns

This facility can be accessed from the top **Materials Management – Inventory Functions** Menu and selecting the option **Material Returns**.

This facilitates return of material to stores.

The following details need to be entered while recording material returns -

1. **MRN No** - Material Return Note Number - maximum 25 characters
2. **MIR No** - select the MIR no thru which this material was drawn from the stores. This causes box captioned GRR No to be filled with GRR Nos associated with the selected MIR No.
3. **GRR No** - select the appropriate GRR No from the box captioned GRR No - this causes the box captioned Material Code to be filled with Material Codes associated with the MIR no and GRR No.
4. **Material Code** - select the appropriate material code. This causes the box titled Material Description to be filled with corresponding description of the material
5. **Quantity Returned** - enter the quantity being returned - please note that this quantity cannot be greater than the quantity originally drawn.
6. **Date Returned** - select the date on which the material was returned
7. **Returned By** - select the name of the employee returning the material

Clicking on the **Down Arrow** button will display the message "**Are you sure to save this material return?**" - if you click on **Yes** button, the return will be saved. If you click on **No** button, the return action will be cancelled.

Inventory Reports

This facility can be accessed from the top **File** Menu - **Reports** and selecting the **Inventory Reports** option. Then **Reports Screen** would be displayed.

The following reports can be generated -

1. **Below Reorder Level Report** - this report gives all those materials whose stock has fallen below the reorder level specified for that material. Select this report in the box captioned **Type of Report** and click **Generate** Button to produce this report.

2. **Category-wise Report** - this report gives all those materials for the selected category of material. Select this report in the box captioned **Type of Report**, select the material category in the box captioned **Material Category** and click **Generate** Button to produce this report.

3. **Consumption Report** - this report gives the material consumption with in a given period. Select this report in the box captioned **Type of Report**, select starting date from the box captioned **From Date** and the ending date from the box captioned **To Date** and click **Generate** Button to produce this report.

4. **HML Report** - High cost, medium Cost and low cost material report - this report gives the report of material in the descending order of the unit cost of material. Select this report in the box captioned **Type of Report** and click **Generate** Button to produce this report.

5. **Material Category Report** - this report gives the list of material in the material category-wise for all categories of materials. Select this report in the box captioned **Type of Report** and click **Generate** Button to produce this report.

6. **Priced Stores Ledger** - this report gives the inventory position with the value of each item. Select this report in the box captioned **Type of Report**, select starting date from the box captioned **From Date** and the ending date from the box captioned **To Date** and click **Generate** Button to produce this report.

7. **Project Consumption** - this report gives the value of the material consumed for a specific project. Select this report in the box captioned **Type of Report**, select the project name in the box captioned **Project Name** and click **Generate** Button to produce this report.

8. **Source-wise Report** - this report gives the inventory based on the source of procurement facilitating **IIL** (Imported material, indigenous material and Locally procured material) analysis. Select this report in the box captioned **Type of Report** and click **Generate** Button to produce this report.

9. **Stock Report** - this report gives the inventory based on the stock available on the date in the stores in the order of material code. Select this report in the box captioned **Type of Report** and click **Generate** Button to produce this report.

10. **VED Report** - this report gives the inventory based on the category of spares facilitating VED (Vital spare, Essential spare and Desirable spare) analysis. Select this report in the box captioned **Type of Report** and click **Generate** Button to produce this report.

11. **Material Consumption Report** - this report allows you to select any **material code** and a period and gives the consumption of the selected material over the selected period of time

12. **Fast Moving Items Report** - this report gives you the list of items that are issued within a specified (specified by you before the report is generated) period after receipt.

13. **Non-Moving Items Report** - this report gives you the list of items that are still I n stock after a specified (specified by you before the report is generated) period after receipt.

14. **Taxes paid Report** - this report gives you the taxes paid during a specified period

15. **Material Expiry Report** - this report gives the materials that are expiring within a specified (specified by you before the report is generated) period from the current date.

Once the report is displayed, you can -

1. Print it on the printer by clicking on the printer icon
2. Save it to a disk file by clicking on the save icon. The file can be saved into a variety of formats including MS-Word, PDF etc. We strongly suggest that the file be saved into a disk file and then print it.

To close the report, click on the **Exit** button located on the top right hand corner of the report. This will take you back to the **Reports** Screen.

A Note on MRP – Material Requirements Planning

What are projects?

MRPPal considers a **project** as an endeavor that has a definite beginning and a definite ending. AS **MRPPal** is focused on manufacturing (while it is very much possible to use MRPPal on any engineering project that has a material component) organization having its operations modeled on the **made-to-order** (some times called **job-order-production** system) system the projects are understood to be –

1. Somewhat **unique** in their own way while being similar – within the same organization
2. A project may not be repeated in identical manner
3. A project may consist of one product or more products and some parts that may be made in-house or subcontracted
4. A product may be an assembly or subassembly
5. An assembly may contain more than one subassembly and the quantity of the subassembly may be more than one
6. Each of the product would have a BoM (Bill of Material)
7. Materials have to be planned using the BoMs and quantities have to be derived based on the quantity of products, assemblies and subassemblies that are needed to deliver the project

Let us consider an organization that is executing projects –

1. It has ongoing projects
2. Some projects are just received – that is the purchase order is just received
3. Some projects are in Engineering stage – that is engineering drawings are being prepared
4. Some projects are on the shop-floor
5. Some projects are nearing completion

Under this scenario, materials are required for –

1. Immediately for projects nearing completion
2. ASAP (As soon as possible) for projects on the shop-floor
3. Procurement actions should be underway for projects in the engineering stage

The general practice of material requirements planning is to prepare a Master BoM collating the material requirements from the constituent BoMs of all open projects. Then taking into consideration of material available in stock and on order, Material Bottlenecks reports (reports of shortages of material) are prepared and monitored and updated.

Consider these issues -

1. Master BoM is a dynamic entity as –
    a. Projects get completed
    b. New Projects are added

      c. Running projects get amended
      d. Projects may get cancelled
2. Maintaining Master BoM is a tough task in the face of dynamism in the environment
3. Therefore, the assistance of a computer becomes essential to effective material requirements planning

Thus to have effective Material Bottlenecks report, the following have to be constantly taken into account –

1. Stock
      a. Material Receipts
      b. Material Issues
      c. Material Returns
2. Purchasing activity
      a. Orders already placed but awaiting delivery
3. Material required for all projects

As material gets received and is issued, the material bottlenecks report has to be updated almost on hourly basis (in some organizations) and on a daily basis in most organizations. An efficient and constantly updated material bottlenecks report goes a long way in making material available on time as well as keeping the material costs down to an optimum level.

MRPPal provides for efficient material bottlenecks reports as well as product readiness reports and date-wise material requirements reports, so that the overall material management can be effective in an organization. The following sections explain how to achieve efficient MRP.

Material Requirements Planning

Material Requirements Planning or MRP is concerned with consolidating the requirements of various materials required for operations.

MRPPal assists you MRP -

1. Consolidating the material requirements
2. It generates reports that inform you of
     a. Detailed material Requirements
     b. Summary of Requirements with material in stock and on order
     c. Material Bottle Necks (material that is in short supply)
     d. Readiness Reports
     e. Production Program

This it achieves by helping you
   1. Define Projects (explained in Administration functionality)
   2. Define the Products (batches, projects etc.)
   3. Define BoM (Bill of Material) for each Product, and sub-assembly
   4. Define Production Program and generate reports

These are explained in the subsequent sections.

Maintain Products

This facility can be accessed from top **Planning-Perquisites** menu and selecting **Maintain Products** option. This can be maintained by **Administrator** only.

MRPPal views a product as the one that has a BoM attached to it. A product may contain one or more assemblies, parts that are wither made in house or sub-contracted and some materials that are bought-out. A project would consist of one or more products.

Add a new product

1. Enter the name of the product (or project or a batch etc.) in the box captioned **Product Name**
2. Click the **down arrow** button and the product will be added to the list of products below

Modify an existing product

1. **Locate the row** containing the product name that needs modification
2. **Double Click** on the row
3. The product name will be displayed in the box captioned **Product Name**
4. Make the desired modifications and click the **down arrow** button
5. It will be displayed as modified in the list box below.

Please Note that there is no delete facility for products. The underlying philosophy is to prevent unintentional deletion of products.

Product Bill of Material

Bill of Material holds the details of material that is required to manufacture a product of execute a project and so on.

This facility can be accessed from top **Planning-Prerequisites-Maintain BoMs** and selecting **Product BoM**. This facility can be maintained by **Production Staff**.

Before you enter materials into a BoM select the product for which BoM is being maintained by selecting from the choices available in the box captioned **Product Name**.

Add materials to BOM

1. Enter BoM Item no in the box captioned **BoM Item No** – up to 6 characters
2. Enter the quantity per unit product (that is for one unit of product / project under consideration) in the box captioned **Item Quantity**
3. Select the nature of item (Bought-out, Made in-house, Subcontracted) from the box captioned **Nature of Item**
4. Select the material code from the box captioned **Material Code**
5. **Units** and **Material Description** would be automatically displayed in the appropriate boxes
6. Click the **down arrow** button and the material will be saved and added to the BoM

Modify an existing item of BoM

1. **Locate the row** containing the item that needs modification
2. **Double Click** on the row
3. The item details will be displayed in the appropriate boxes
4. Make the desired modifications and click the **down arrow** button
5. It will be displayed as modified in the list box below.

Delete an existing item

1. **Locate the row** containing the item that needs to be deleted
2. **Double Click** on the row
3. The item details will be displayed in the appropriate boxes
4. Click the **X** button
5. It will display a message "**You are Deleting**" along with the Material code
6. Clicking on **No** button would cancel the delete action
7. Clicking on the **Yes** button would delete the item details from the BoM

Clicking on **Print BoM** button will print the BoM

Sub Assembly Bill of Material

This facility can be accessed from top **Planning-Prerequisites-Maintain BoMs** and selecting **Sub Assembly BoM**. This facility can be maintained by **Production Staff**.

Before you enter materials into a BoM select the sub assembly for which BoM is being maintained by selecting from the choices available in the box captioned **Sub Assembly**.

Add materials to BOM

1. Enter BoM Item no in the box captioned **BoM Item No** – up to 6 characters
2. Enter the quantity per unit product (that is for one unit of product / project under consideration) in the box captioned **Item Quantity**
3. Select the nature of item (Bought-out, Made in-house, Subcontracted) from the box captioned **Nature of Item**
4. Select the material code from the box captioned **Material Code**
5. **Units** and **Material Description** would be automatically displayed in the appropriate boxes
6. Click the **down arrow** button and the material will be saved and added to the BoM

Modify an existing item of BoM

1. **Locate the row** containing the item that needs modification
2. **Double Click** on the row
3. The item details will be displayed in the appropriate boxes
4. Make the desired modifications and click the **down arrow** button
5. It will be displayed as modified in the list box below.

Delete an existing item

1. **Locate the row** containing the item that needs to be deleted
2. **Double Click** on the row
3. The item details will be displayed in the appropriate boxes
4. Click the **X** button
5. It will display a message "**You are Deleting**" along with the Material code
6. Clicking on **No** button would cancel the delete action
7. Clicking on the **Yes** button would delete the item details from the BoM

Clicking on **Print BoM** button will print the BoM

MRP Reports

There are **two sets of reports** –

1. **Overall MRP for the organization** – these reports give overall material requirement considering all the projects that are yet to be closed. These reports give overall material picture
2. **Individual MRP – that is for a project or a product** – assists in finding out the material requirements / bottlenecks for a selected product or a project. Using these reports, production / operations can be planned and to plug those immediate material bottlenecks

These are explained in subsequent sections

Overall MRP for the organization

These reports can be accessed from top **File-Reports** menu and selecting **MRP Reports** option.

The **MRP Reports** screen gives the open projects (that is all the projects in progress and are yet to be closed) in the list box captioned **Production Program**.

The screen contains a box captioned **Type of Report** which contains all the available reports. Select the desired report and click the **Print Report** button to generate the desired report.

The reports give details for the entire organization – that is for all the open projects.

A **bottleneck** may be understood as an item that is in short supply – that is

1. It may be available in the warehouse but the quantity available is less that the total demand
2. It may be on order with adequate quantity – but is not available on stock
3. It may be even received in the warehouse but not yet accepted into stock. That is a material receipt is not taken into stock until it is accepted. Generally all materials received would undergo some sort of inward inspection to ensure that the ordered material is received with specified quality and quantity.

The following reports are available –

1. **Production Program** – this report gives the list of all open projects between the selected dates
2. **Requirements – Detailed – All** – this report gives the master BoM for the Production Program – in detail for each of the products and projects with summaries for each material – for all categories of items
3. **Requirements – Detailed – Bought out**– this report gives the master BoM for the Production Program – in detail for each of the products and projects with summaries for each material – for all bought out items
4. **Requirements – Detailed – Made In-house**– this report gives the master BoM for the Production Program – in detail for each of the products and projects with summaries for each material – for all items that are made in-house
5. **Requirements – Detailed – Subcontracted**– this report gives the master BoM for the Production Program – in detail for each of the products and projects with summaries for each material – for all subcontracted items
6. **Requirements – Summary – All** – this report gives summary of all items – summarized for each material – for all categories of materials
7. **Requirements – Summary – Bought out**– this report gives summary of all items – summarized for each material – for all bought out materials
8. **Requirements – Summary – Made In-house**– this report gives summary of all items – summarized for each material – for all made in-house items

9. **Requirements – Summary – Subcontracted** –– this report gives summary of all items – summarized for each material – for all subcontracted items
10. **Bottlenecks Report** – this report gives the bottlenecks (material shortages) for all categories of materials
11. **Bottlenecks Report – Bought out** – this report gives the bottlenecks (material shortages) for all bought out items
12. **Bottlenecks Report – Made In-house** – this report gives the bottlenecks (material shortages) for all made in-house items
13. **Bottlenecks Report-Subcontracted** – this report gives the bottlenecks (material shortages) for all subcontracted items
14. **To be Procured** – this report gives a list of materials for which stock is not available and purchase orders have not been placed

Material Availability / Readiness Reports

These are individual MRP Reports – that is they details for a product or project. Bottleneck reports in this category help us decide the material readiness to start production of a product or a project.

A **bottleneck** may be understood as an item that is in short supply – that is

1. It may be available in the warehouse but the quantity available is less that the total demand
2. It may be on order with adequate quantity – but is not available on stock
3. It may be even received in the warehouse but not yet accepted into stock. That is a material receipt is not taken into stock until it is accepted. Generally all materials received would undergo some sort of inward inspection to ensure that the ordered material is received with specified quality and quantity.

The following reports are available –

1. **Requirements for a Project – All** – this report gives Master BoM of all items for a selected project
2. **Requirements for a Project – Bought out** – this report gives details of all bought out items for a selected project
3. **Requirements for a Project – Made in-house** – this report gives details of all made in-house items for a selected project
4. **Requirements for a Project - Subcontracted** – this report gives details of all subcontracted items for a selected project
5. **Bottlenecks for a Project** – this report gives bottlenecks of all items for a selected project
6. **Bottlenecks for a Project – Bought out** – this report gives bottlenecks of bought out items for a selected project
7. **Bottlenecks for a Project – Made in-house** – this report gives bottlenecks of made in-house items for a selected project
8. **Bottlenecks for a Project – Subcontracted** – this report gives bottlenecks of made subcontracted items for a selected project
9. **Requirements for a Product – All** – this report gives master BoM of all items for a selected product
10. **Requirements for a Product – Bought out** – this report gives details of all bought out items for a selected product
11. **Requirements for a Product – Made in-house** - this report gives details of all made in-house items for a selected product
12. **Requirements for a Product – Subcontracted** – this report gives details of all subcontracted items for a selected product
13. **Bottlenecks for a Product** – this report gives bottlenecks for a selected product
14. **Bottlenecks for a Product – Bought out** – this report gives bottlenecks of bought out items for a selected product

15. **Bottlenecks for a Product – Made in-house** – this report gives bottlenecks of made in-house items for a selected product
16. **Bottlenecks for a Product – Subcontracted** – this report gives bottlenecks of made subcontracted items for a selected product

Project Cost Estimation

Project Cost Estimation consists of two parts –

1. **Effort Estimation** – assists in estimation the effort required to execute the project in different categories of personnel
2. **Cost Estimation** – cost estimation including material cost estimation and consolidation of all costs

These are explained in greater detail in subsequent section

Effort Estimation

Estimation of Effort in four classes of manpower, namely, Engineering staff, QA staff, Technical Assistants and Shop-floor staff.

The technique used in effort estimation is Task Based Estimation. That is –

1. The project is broken down into its constituent sub-assemblies. Each sub-assembly may be a stand alone product itself
2. The sub-assembly is broken down into its manufacturing stages – these stages could be
   a. Design
   b. Engineering
   c. Fabrication
   d. Metal finish / painting
   e. Assembly
   f. Wiring
   g. Quality control & functional testing
   h. Packing and dispatch
   i. Installation and commissioning
   j. Or any others that are appropriate to the project and the organization
3. The each sub-assembly is broken down into its constituent tasks performance and completion of which will lead to completion of the sub-assembly. Completion of all sub-assemblies would result in completion of the project
4. For each task we take three effort inputs namely –
   a. Optimistic time (a) – that is the effort required in the best case scenario
   b. Pessimistic time (b) – that is the effort required in the worst case scenario
   c. Most likely time (m) – that is the effort required in the normal case scenario
5. The expected time for each task is the mean of the three time inputs using the Beta Distribution – $(a + 4*m + b)/6$
6. The task is –
   a. A work package that can be assigned to a team of persons
   b. A team of persons can comprise of one person or more
   c. The size of the task can be determined from case-to-case depending on the organization and the project. The task size can be larger for bigger projects and smaller for smaller projects. Our recommendation is that the task size be four hours or more.
7. For each task, in addition to effort inputs, a class of person is also to be assigned
8. The effort is consolidated in person hours in four classes of persons, namely
   a. Engineering Staff – these people carry out functions such as design, detailed engineering, preparation of engineering drawings, customer liaison, etc
   b. QA Staff – these persons carry out quality control activities such as stage and final inspections, functional testing etc
   c. Technical Assistants – these persons assist the engineering staff and also first line supervision in quality control and shop floor personnel

   d. Shop Floor staff – these persons carry out various manufacturing / operations tasks to execute the project

This facility can be accessed from top **File-Estimation** menu and selecting **Effort Estimation** Option. This can be accomplished by **Production Staff.** The **Effort Estimation** Screen would be displayed.

The below steps may be followed in effort estimation –

1. Select customer from the box captioned **Customer Id** – this causes the box captioned **Project Name** to be filled with projects of the selected customer
2. Select the desired project from the box captioned **Project Name** – this causes the estimation details, if any already existing (estimated earlier) to befilled in the appropriate places
3. Now carry out the estimate entry in section captioned **Estimate Entry**
   a. Enter the name or select an existing sub-assembly from the box captioned **Sub Assembly**
   b. Enter the name or select an existing manufacturing stage from the box captioned **Manufacturing Stage**
   c. Enter the name or select an existing operation from the box captioned **Operation**
   d. Select the type of person performing the task from the box captioned **Person Type**
   e. Enter the best case scenario effort in person hours in the box captioned **Optimistic**
   f. Enter the normal case scenario effort in person hours in the box captioned **Most Likely**
   g. Enter the worst case scenario effort in person hours in the box captioned **Pessimistic**
   h. Clicking on **Save** button would save the entry
   i. Repeat the above steps as many times as necessary. You may complete an estimate in multiple sessions – that is the estimate need not be completed at a stretch in one session
4. As you carry out estimate entry, you will observe that the frame captioned Summary would be filled with summary of the estimate – based on the manufacturing stage and the list box in the left hand side list box and based on the category of the person in the right hand side list box.
5. The task list is in the tab captioned **Task list** – you can see all the task you entered by clicking on this tab

To modify a task

1. Visit the **Task List** tab by clicking on the tab
2. **Locate the row** containing the task that needs modification
3. **Double click** on the row – this causes the tab to Summary Tab and all the relevant boxes to be filled with exiting task details
4. Carry out the desired modifications
5. Clicking on **Save** button would save the modification

To delete a task

1. Visit the **Task List** tab by clicking on the tab
2. **Locate the row** containing the task that needs modification
3. **Double click** on the row – this causes the tab to Summary Tab and all the relevant boxes to be filled with exiting task details
4. Click on Delete button – this will cause a message Delete : along with the task info to be displayed
5. Clicking on **Yes** button would cause the task to be deleted
6. Clicking on **No** button would cancel delete action

Printing the report facility is provided in **Cost Estimation** screen.

Cost Estimation

Cost estimation uses the following method for estimating the cost for a project –

1. Cost of effort by personnel – as explained in the above section on effort estimation
2. Add cost of indirect personnel as a percentage of the direct personnel cost
3. Direct Material cost
4. Add indirect material cost as a percentage of direct material cost
5. Add cost of overheads as a percentage of (cost of effort + cost of material – including indirect costs) to obtain cost before profit
6. Add profit as a percentage of cost before profit to obtain cost after profit for the project.
7. Please note that all percentages are to be entered by the user
8. Material cost may be estimated selecting each of the materials from the stock or from the BoMs or a combination of both

This facility can be accessed from top **File-Estimation** menu and selecting **Cost Estimation** Option. This can be accomplished by **Production Staff.** The **Cost Estimation** Screen would be displayed

Before you access this facility **ensure** that effort estimation for the desired project is already carried out.

The **Cost Estimation Screen** has three tabs, namely,

1. **Summary** – this tab would contain summary of the cost estimation for the project
2. **Material Cost Estimation** – this tab facilitates estimation of material cost for the project
3. **Matl Cost Estimation using BoMs** – this tab facilitates estimation of material cost for the project using BoMs already prepared

Now the following steps are necessary to carry out cost estimation

1. Select customer from the box captioned **Customer Id** – this causes the box captioned **Project Name** to be filled with projects of the selected customer
2. Select the desired project from the box captioned **Project Name** – this causes the estimation details, if any already existing (estimated earlier) to befilled in the appropriate places

Please note that the cost of material would be retrieved from the inventory based on the latest receipt of material – that the latest cost available from the inventory.

Next you carry out Material cost estimation. If BoMs for the products / sub-assemblies are ready, you may carry out the material cost estimation as follows –

1. Visit **the Matl Cost Estimation using BoMs** tab by clicking on the tab
2. Select the product name from the box captioned **Product Name**

3. Enter the quantity of the product that is required for the project in the box captioned **Quantity**
4. Click the **down arrow** button – it will be added to the list in the list box captioned **Selected Products**
5. Once you have selected all the products, click on the **Estimate Material Cost** button – all required materials would be extracted from the BoMs and their quantities computed – they will be loaded into the tab captioned **Material Cost Estimation**. You may visit the tab and add more materials or modify the quantities or delete some materials as you may desire to achieve the material cost estimation
6. You can perform the above actions as many times as you desire. Whenever you click **Estimate Material Cost** button, all the materials in the tab **Material Cost Estimation** would be erased (if any) and they would be re-loaded.
7. To **delete a selected product** from the list –
    1. **Locate the row** containing the product to be deleted
    2. **Double click** on the row – this will cause the boxes to be filled with appropriate values
    3. Verify the values and if you wish to delete the selected product – click on the **up arrow** button
    4. This will display a message "**Do you wish to delete :** along with the product name
    5. Clicking on **Yes** button would cause the product to be deleted from the list
    6. Clicking on **No** button would cause the delete action to be cancelled
8. To **modify the quantity** of a product
    1. **Locate the row** containing the product whose quantity is to be modified
    2. **Double click** on the row – this will cause the boxes to be filled with appropriate values
    3. Make the desired modifications and click on the **down arrow** button
    4. The modifications would be saved and shown in the list box captions **Selected Products**

Now, you are ready to finalize / carry out material cost estimation. Click on the tab captioned **Material Cost Estimation**. If you have already used the BoMs to estimate material cost the list box captioned **List of Required Material** would be filled with the materials derived from the selected BoMs.

As you add / delete materials, you would notice that the box captioned **Total Cost of Material** would be updated with the estimated cost of materials.

To add materials –

1. Select the sub assembly from the box captioned **Sub Assembly** or enter a new sub assembly name in it. You may also leave this blank if the material is directly used in the product BoM
2. You may select a material code from the box captioned **Material Code** – this would cause the boxes captioned **Units** and **Material Description** to be filled automatically with values from the inventory
3. Enter the required quantity for the project in the box captioned Required Qty
4. Click the down arrow button to save the addition of material.

5. You repeat the above steps as many times as necessary until the material cost estimation is completed.

To **delete a selected material** from the list –

1. **Locate the row** containing the material to be deleted
2. **Double click** on the row – this will cause the boxes to be filled with appropriate values
3. Verify the values and if you wish to delete the selected product – click on the **up arrow** button
4. This will display a message "**Confirm deletion of the selected material:** along with the material description
5. Clicking on **Yes** button would cause the material to be deleted from the list
6. Clicking on **No** button would cause the delete action to be cancelled

To **modify the quantity** of a material

1. **Locate the row** containing the material whose quantity is to be modified
2. **Double click** on the row – this will cause the boxes to be filled with appropriate values
3. Make the desired modifications and click on the **down arrow** button
4. The modifications would be saved and shown in the list box captions **List of Required Material**

Now once all the material required for the project is included in the material cost estimation, you are now ready to complete the cost estimation for the project. To do this, click on the Summary tab and visit Summary tab where you can complete the cost estimation.

1. You would observe that the effort in person hours is automatically taken from the effort estimation and is filled in the appropriate boxes. You need to verify the person hour costs against each of the category of personnel and enter the correct values as per your organizational norms. This will cause the effort costs for each of the category of personnel to be computed and appropriate boxes to be filled with the computed values
2. Verify the percentage of indirect personnel cost in the box captioned **Indirect Personnel Cost %** and enter the correct percentage as per your organizational norms.
3. You would observe that the box captioned **Total Personnel Cost** to be filled with the computed values of direct personnel costs and the indirect personnel cost
4. You would observe that the box captioned Direct Material Cost to be filled with the material cost you have derived in the **Material Cost Estimation** Tab.
5. Verify the percentage of indirect material cost in the box captioned **Indirect Material %** and enter the correct percentage as per your organizational norms.
6. You would observe that the box captioned **Total Material Cost** to be filled with the computed values of direct material costs and the indirect material cost
7. Verify the percentage of overhead costs in the box captioned **Other Overheads %** and enter the correct percentage as per your organizational norms.

8. You would observe that the box captioned Total Cost Before Profit to be filled with computed value of personnel costs, material costs and overheads
9. Verify the percentage of profit in the box captioned **Profit %** and enter the correct percentage as per your organizational norms.
10. This will cause the box **Total Cost of the Project after Profit** to be filled with appropriate value. This is the cost estimate for the project as per your effort estimate and material estimate.
11. Clicking on **Save Project Cost** would save the estimate summary.

Reports

Three reports are available for cost estimation –

1. Effort Estimate – this report gives the details of effort estimate for the selected project
2. Material Estimate – this report gives the details material estimate for the selected project
3. Estimate Summery – this report gives the summary of the project cost estimate

To generate the report -

1. Select the desired report from the box captioned **Select Report**
2. Click on the **Print Report** button
3. The report would be displayed

For Support or a demo

Contact

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