WORCESTER POLYTECHNIC INSTITUTE

MRP LAB

MICROSOFT DYNAMICS GP 10.0

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COURSE: ______________________
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INTRODUCTION:

In this lab, you will be working with a few modules of the Microsoft Dynamics GP on an organization/company called Fabrikam, Inc. The objectives for this lab are:

1. To learn how to login to the system
2. To understand how data flows from various functions in organizations (from engineering to manufacturing to accounting).
3. To understand some of the built in functionalities in Microsoft Dynamics and also interpretation of specific functions.

Fabrikam, Inc.

During this lab, we will be using data from a fictitious organization called Fabrikam, Inc. The data corresponding to this organization is installed as part of Microsoft Dynamics GP 10.0 installation.

KEY CONCEPTS

- **Enterprise Systems**
  Enterprise Systems help to integrate and optimize different business processes. These provide a single system that is central to the organization and ensure that information can be shared across all functional levels and management hierarchies. Typically, these systems include a number of applications or modules, which are built around a common database. They may include different modules like Manufacturing, Financials, Human Resources, Accounting, etc. Some vendors providing such systems are SAP, Oracle (e.g. Oracle Applications Suite), and Microsoft (Microsoft Dynamics GP).

- **Microsoft Dynamics GP**
  Microsoft Dynamics GP is a software package that runs on the top of Microsoft SQL Server/Sharepoint server. It is popular amongst small and medium-sized organizations to plan, manage, and control their operations. It is a line of integrated, adaptable business management solutions that automate and streamline financial, customer relationship and supply chain processes.

- **Bill of Materials**
  The Bill of Materials (BOM) is a structured list of all materials or parts needed to produce a particular finished product, assembly, sub-assembly, manufactured part, or purchased part. The Bill of Materials Entry window is the main window in Manufacturing Bill of Materials. Use this window to enter information about your bills of materials and their components, such as names, categories and default sites for components, and for finished goods.
You can indicate if all the components in the bill of materials should be backflushed—that is, if your accounting processes should be based on the assumption that the components used on the production floor will exactly match those in your bills of materials. You also can use the Bill of Materials Entry window to review bills of materials and to modify existing bills of materials.

**Concepts – MS DYNAMICS**

(Certain concepts with respect to Dynamics GP are mentioned below)

**MRP**

Materials Requirement Planning (MRP) is a planning procedure for production processes that have several levels of components making up the products. Given information describing the production requirements of the several finished goods of the system, the structure of the production system, the current inventories for each operation and the lot sizing procedure (see some examples in the table below) for each operation, MRP determines a schedule for the operations and raw material purchases.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Policy</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFL</td>
<td>Lot for lot</td>
<td>Deliver in each period the amount required</td>
</tr>
<tr>
<td>FOP</td>
<td>Fixed order</td>
<td>When a delivery is required deliver the amount required for the next m periods, where m is a parameter of the policy</td>
</tr>
<tr>
<td>FOQ</td>
<td>Fixed order</td>
<td>When a delivery is required deliver the amount Q, where Q is a parameter of the policy. If the current requirement exceeds Q, deliver the amount of the current requirement</td>
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In MRP two types of information are required: **STRUCTURAL** and **TACTICAL**.

Structural information is information about the items (parts/components) that the company uses and how different items are related to one another. It includes information for each item such as lead time and lot (or batch) size rule. The key point about this information is that it changes relatively infrequently.

Tactical information is information about the current state of the company - for example sales orders (real and forecast) pending, the master production schedule, on-hand inventory levels and purchase orders. Obviously the key point about this information is that it changes frequently.

**MPS**

The master production schedule (also commonly referred to as the MPS) is effectively the plan that the company has developed for production of its end items, typically derived from aggregate planning efforts to balance demand with capacity (such as
staffing or equipment resources, use of inventory). The aggregate plan has as input a variety of data, e.g. forecast demand, production costs, inventory costs, etc and as output a production plan detailing amounts to be produced, staffing levels, etc for each of a number of time periods. The amounts to be produced are the MPS.
This production plan:
- Operates at an *aggregate* level (that is it does not usually go into great detail about parts to be used, etc - hence the name *aggregate planning*); and
- Is *cost driven*, that is it attempts to meet the specified requirements at minimum cost.

**MRP Explosion**
The MRP explosion uses the Bill of Materials (BOM), the master production schedule, and tactical (e.g., current inventory levels) and structural (e.g., lead times) information to determine how many and what components should be produced when to support the MPS. As an example, a BOM would specify that a car requires five wheels including the spare. BOM's are characterized by the number of levels involved, following the structure of assemblies and sub assemblies. The first level is represented by the MPS and is 'exploded' down to final assembly. Thus a given number of finished products is exploded to see how many items are required at the final assembly stage.
LOGGING INTO MS DYNAMICS

On your machine, select Windows Start -> All Programs -> Microsoft Dynamics -> GP 10.0 (or current version) -> GP.
1. The package opens and prompts you for your credentials. Change the User ID to the user id assigned to you, e.g., student00 and the corresponding password. (Please note that in case you do not see the following screenshot, but a message prompting for Dictionary Location ID, or “You need to run Microsoft Dynamics GP Utilities before you can run Microsoft Dynamics GP. Do you want to launch Microsoft Dynamics GP Utilities now?” you will have to use another machine Inform the instructor about the same).

2. In the window that opens, select the company as Fabrikam, Inc. and press OK.

3. Press OK to the message that will be prompted.
4. Sometimes a Microsoft Office Outlook setup wizard may start. Cancel the operation.

5. The default window looks as below: You may close the homepage and the window in the foreground.

6. Information pertaining to the user logged along with the company selected is displayed at the bottom left.

7. Notice the image buttons on the bottom left of the screen. By default, Financial, Sales, Home, Administration, Inventory, Manufacturing Lists, etc.
LAB ACTIVITIES


Manufacturing → MRP → Regeneration

Click on the ‘Process’ button to generate the MRP depending on the bucket size.
Export the generated file in the form of a file (delimited) or a screen report.

The report on the next page would be generated along with the reports generated on previous instances.

- What is the significance of an exception report?

- What is a bucket size?
2. Manufacturing → Forecasting → MPS

To view the Master Production Schedule - MPS
Select a Sales Forecast based on which the MPS has to be performed.

Modify/Change the existing Sales forecast and examine the MPS
- What does this MPS – Master Production Schedule tell you?

3. Manufacturing ➔ Forecasting ➔ Sales Forecasting
View the existing sales forecasts that are present in the system.

View an existing sales forecast and modify it:
• How would changing the sales forecast affect your system?

4. Manufacturing ➔ Forecasting ➔ SF Activation

Select an existing Sales Forecast and activate it for a specific MPS.