Production Planning and Execution (PP) Case Study

This case study explains an integrated production planning and execution process in detail and thus fosters a thorough understanding of each process step and underlying SAP functionality.

**MOTIVATION**
The data entry requirements in the production planning exercises (PP 1 through PP 6) were minimized because much of the data already existed in the SAP system. This stored data, known as master data, simplifies the processing of business transactions. Examples for this were material master data, bills of materials, and routings.

In this case study, we will create consumption values for a finished product to plan and process a complete manufacturing cycle.

**PREREQUISITES**
Before you use this case study, you should be familiar with navigation in the SAP system.

In order to successfully work through this case study, it is not necessary to have finished the PP exercises (PP 1 through PP 6). However, it is recommended.

**NOTES**
This case study uses the Global Bike Inc. (G.B.I.) data set, which has exclusively been created for SAP UA global curricula.
**Process Overview**

**Learning Objective** Understand and perform a manufacturing process cycle.  

**Scenario** In order to process a complete manufacturing process you will take on different roles within the GBI company, e.g. production supervisor, shop floor worker and plant manager. Overall, you will be working in the Materials Management (MM) and the Production Planning and Execution (PP) departments.

**Employees involved**  
- Jun Lee (Production Supervisor)  
- Jermain Kumins (Shop Floor Worker 1)  
- Hiro Abe (Plant Manager Dallas)  
- Lars Iseler (Production Order Worker)  
- Susanne Castro (Receiving Clerk)  
- Sanjay Datar (Warehouse Employee)  
- Michael Brauer (Shop Floor Worker 4)

Before you can start forecasting demand for your touring bike product group changes in the material master record of the bikes as well as historical consumption values of the products need to be maintained.

Afterwards you will create a 12-month sales and operations plan (SOP) for your product group, receive the production relevant goods from the storage location and issue goods to the production order.

In the last steps the completeness of the production is confirmed, produced goods are received in the storage location and costs assigned to the production order are reviewed.
CASE STUDY

Change Material Master Record

**Task** Prepare a material master record for Demand Planning. **Time** 15 min

**Short Description** In order to plan GBI’s deluxe touring bikes (black, silver and red) prepare their material master records by changing the MRP 3 view.

**Name (Position)** Jun Lee (Production Supervisor)

To change a material’s MRP 3 view, follow the menu path:

**Menu path**

Logistics ► Production ► Master Data ► Material Master ► Material ► Change ► Immediately

In the Material field, find and select your red Deluxe Touring bike first.

If you do not remember its material number, position your cursor in the Material field and click on the search icon or press F4. Make sure you are on the Material by Material Type tab. Select Material Type Finished Product (FERT) and enter *### in the Material field. Remember to replace ### by your three-digit number given by your instructor, e.g. *005 if your number is 005. Then, press Enter and select the red Deluxe Touring bike with a double click.

When your material number (DXTR3###) is entered in the Material field, click on or press Enter.

On the following screen, select MRP 3 (so that this line is highlighted).

Then, press Enter or click on . The following screen will appear.
Find and select the GBI manufacturing facility in Dallas (DL00). Then, enter its Finished Goods Stor. Location (FG00). Press Enter or click on ✓.

In the MRP 3 view, enter Strategy group 40 (Planning with final assembly), Consumption mode 1 (Backward consumption only) and Bwd.consumption per. 30.

Click on ✓ to save your changes to the red deluxe touring bike. Select OK and press Enter to acknowledge the following warning message if needed.

The system informs you in the status bar that material DXTR3### has been changed successfully.

Repeat the same procedure for the silver and the black deluxe touring bike material master. Start with the silver bike (DXTR2###), then modify the black bike (DXTR1###).

Click on the exit icon to return to the SAP Easy Access screen.
CASE STUDY

Create Consumption Values for Finished Product

**Task** Create consumption values for a finished good.  

**Time** 15 min

**Short Description** Create a forecasting view and associated consumption values that will permit forecasting of future consumption for our product.

**Name (Position)** Jermain Kumins (Shop Floor Worker 1)

To create consumption values, follow the menu path:

Logistics ► Production ► Master Data ► Material Master ► Material ► Create (Special) ► Finished Product

In the Material field, find and select your red Deluxe Touring bike.

If you do not remember its material number, position your cursor in the Material field and click on the search icon or press F4. Make sure you are on the Material by Material Type tab. Select Material Type **Finished Product** (FERT) and enter *### in the Material field. Remember to replace ### by your three-digit number given by your instructor, e.g. *005 if your number is 005. Then, press enter and select red Deluxe Touring bike with a double click.

When your material number (DXTR3###) is entered in the Material field, select Industry sector **Mechanical Engineering**, click on or press Enter.

On the following screen, select Forecasting (so that this line is highlighted) and make sure the indicator **Create views selected** is checked.
Then, press Enter or click on 👇🏻. The following screen will appear.

Find and select the GBI manufacturing facility in Dallas (DL00). Then, press Enter or click on 👇🏻.

Note the system message in the status bar which informs you that the bike material master record already exists and will now be extended with the Forecasting view.

On the Forecasting tab, select 👇🏻. If you do not see the Total consumption column, press on 👇🏻.

Populate the Total consumption column with the following data (start with the actual period minus one month / current year.

<table>
<thead>
<tr>
<th>Periods</th>
<th>Year</th>
<th>Current Year</th>
<th>Current Year - 1</th>
<th>Current Year – 2</th>
<th>Current Year - 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>113</td>
<td>93</td>
<td>83</td>
<td>73</td>
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<td>11</td>
<td>103</td>
<td>83</td>
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<td>105</td>
<td>85</td>
<td>75</td>
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<td>9</td>
<td>112</td>
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<td>4</td>
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<td>70</td>
<td>60</td>
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<td>3</td>
<td>100</td>
<td>80</td>
<td>70</td>
<td>60</td>
<td></td>
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<tr>
<td>2</td>
<td>102</td>
<td>82</td>
<td>72</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>109</td>
<td>89</td>
<td>79</td>
<td>69</td>
<td></td>
</tr>
</tbody>
</table>

Enter data back 3 years as shown in the following graphic.
Click on \( \large \heckmark \) to save your entries. Then, click on \( \large \chevronleft \) to return to the SAP Easy Access screen.

Again on the Forecasting tab, select Forecast model \( \large X \) (Seasonal trend model), Hist. period 60, Forecast periods 12, Periods per season 12, Initialization pds 12, and Initialization \( \large X \) (Initialization by system).

Uncheck \( \large \text{Reset automatically} \), check \( \large \text{Param.optimization} \), select Optimization level \( \large F \) (Fine), Alpha factor 0.20, Beta factor 0.10, Gamma factor 0.30, and Delta factor 0.30.

Then, click on \( \large \heckmark \) to save your modifications to the bike master record.

Click on the exit icon \( \large \heart \) to return to the SAP Easy Access screen.
CASE STUDY

Change Routing

**Task**: Change a routing for a finished good.

**Short Description**: Change the routing for your red Deluxe Touring bike.

**Name (Position)**: Jun Lee (Production Supervisor)

After the operational steps are laid out, the components must be allocated to the individual operations. This is a progressive process where each operation builds off the materials that entered production in the previous operations.

To change a routing, follow the menu path:

**Logistics ► Production ► Master Data ► Routings ► Routings ► Standard Routings ► Change**

If not already filled in, enter the material number for your red Deluxe Touring bike (**DXTR3###**). In the Plant field, enter GBI’s Dallas plant number (**DL00**). Then, press Enter or click on 🔄.

Choose 🔄 and select the following materials.

Once you have selected the lines for the red touring frame (**TRFR3###**) and the touring seat kit (**TRSK1###**), choose New Assignment.
In the following screen, in the Oper./Act. field enter operation 0020 and press Enter. Back on the Material Component Overview screen, you see that now both components have been assigned to operation 0020.

```
Component Operation
TRHB1### (touring handle bar) 0030
TRWA1### (touring aluminum wheel assembly) 0040
DGAM1### (derailleur gear assembly) 0040
CHAN1### (chain) 0050
BRKT1### (brake kit) 0060
PEDL1### (pedal assembly) 0070
WDOC1### (warranty document) 0100
PCKG1### (packaging) 0100
```

Repeat the same process for the other components and assign them to operations as shown below.

```
Component Operation
TRHB1### TRWA1### DGAM1### CHAN1### BRKT1### PEDL1### WDOC1### PCKG1###
```

Click on and save your entries with .

Click on the exit icon to go back to the SAP Easy Access Menu.
**Display Product Group**

**Task** Display a product group.  

**Time** 5 min

**Short Description** Display the product group (product family) for all your Deluxe Touring bikes.

**Name (Position)** Jun Lee (Production Supervisor)

A product group (product family) supports high-level planning. This way, it is not necessary to delve into the minutia of creating planning forecasts for every material in the company.

To display the deluxe touring bike product group, follow the menu path:

**Logistics ► Production ► SOP ► Product Group ► Display**

In the Display Product Group: Initial Screen, in the Product group field find and select your group for deluxe touring bikes. After having pressed the search icon (or pressed F4), enter ###* in the Material description field. Remember to replace ### with your three-digit number, e.g. enter *009 if your number is 009.

Then, press Enter or click on ✅ to display the search results. You should see five product groups already defined for your set of material master data (compare with the screen shown below).
Double-click on the line for deluxe touring bicycles to select the group.

Now that the correct product group (PG-DXTR###) is filled in, make sure that Plant DL00 is entered. Then, press Enter to display the product group details.

On this screen you can see that this product group defines proportions for three different bikes: the black, silver and red deluxe touring bike. For the black bike a share of 40% will be considered and 30% for the silver and the red bikes each.

Click on the exit icon to return to the SAP Easy Access screen.
**CASE STUDY**

### Create Sales and Operations Plan

**Task** Create a sales and operations plan for a product group.  
**Time** 20 min  
**Short Description** Create a 12-month sales and operations plan (SOP) for your product group.  
**Name (Position)** Jun Lee (Production Supervisor)

A sales and operations plan (SOP) is a planning tool used to consolidate data for forecasting future sales and production levels as well as the methods needed to meet those requirements. In this task, our SOP will be based on historical consumption.

To create an SOP, follow the menu path:

- **Logistics** ► **Production** ► **SOP** ► **Planning** ► **For Product Group** ► **Change**

Make sure that Product group **PG-DXTR###** and Plant **DL00** are entered. Then, select **Active version**. Record the version number: ________

In the system menu, select **Edit** ► **Create sales plan** ► **Forecast**....

Select **Period intervals**, Forecast from **current period/current year** to **previous period/next year**, Historic Data from **01/three years ago** to **previous period/current year**, Forecast execution **Aut. model selection**. Before clicking on **Submit**, compare your screen with the one below.
Click on ✔ and continue through warning messages if needed.

The system selected Trend and season. Click on ➕Forecasting. In the next screen, choose ✡ (Interactive Graphics).

Click on ✔ to go back to the results screen.

You can see that the system tested and found Seasonal and Trend tendencies in the past consumption data and has applied a Seasonal Trend Model.

Click on ✔ (Copy and Save). The sales forecast is copied into our Sales and Operations Plan.
As Target day’s supply enter 5 for each forecasted period.

In the system menu, select Edit ► Create product plan ► Synchronous to sales. Note the change in the Production and in the Stock level lines. The production plan is created to match the sales forecast.

In the system menu, select Edit ► Create product plan ► Target day’s supply. Note the impact on the production plan and stock levels. Production levels are generated to match the sales plus produce enough to put into stock to meet the target days of supply specifications.

Review the Planning Table (your numbers may be different than this table).

Click on [Characteristics] to review a graphic representation of your planning table.

You may click on [Legend] to display a legend for this graphic.
Click on 🔄 to go back and save with 🔄.

Click on the exit icon 🚪 to return to the SAP Easy Access screen.
Transfer SOP to Demand Management

Task  Transfer SOP to Demand Management.  
Time 10 min

Short Description  Transfer the Sales and Operations Plan to Demand Management.

Name (Position)  Jun Lee (Production Supervisor)

Demand Management is the tool used to disaggregate planning data from high-level plans down to the detailed planning level. For this task, planning for the Deluxe Touring Product Group will be broken down into the individual components that belong to this group.

To transfer the SOP to Demand Management, follow the menu path:

**Logistics ► Production ► SOP ► Disaggregation ► Transfer PG to Demand Planning**

Enter Product group **PG-DXTR###**, Plant **DL00**, and the version saved in the previous task (**A00**).

**Transfer Planning Data to Demand Management**

<table>
<thead>
<tr>
<th>Transfer now</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product group</td>
</tr>
<tr>
<td>Plant</td>
</tr>
<tr>
<td>Version</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transfer strategy and period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales plan for material or PG members</td>
</tr>
<tr>
<td>Sales plan for mat. or PG members as proportion of PG</td>
</tr>
<tr>
<td>Production plan for material or PG members</td>
</tr>
<tr>
<td>Prod.plan for mat. or PG members as proportion of PG</td>
</tr>
</tbody>
</table>

| From | 07/28/2010 |
| To | |

Indepedent requirement specifications:

| Requirements type | |
| Version | |
| Active | ✓ |

Select **Prod.plan for mat. or PG members as proportion of PG** and **Active**. Then, deselect the **Invisible Transfer** indicator to present the disaggregation results on another screen allowing the planner to modify the results before saving them manually to Demand Management.
Select **Transfer now** and examine the Planned Independent Requirements generated for **DXTR1###**.

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</tr>
</thead>
<tbody>
<tr>
<td>DXTR1###</td>
<td>BL08</td>
<td>AS</td>
<td></td>
<td></td>
<td>44</td>
<td>43</td>
<td>48</td>
<td>42</td>
<td>42</td>
<td>50</td>
<td>55</td>
<td>56</td>
</tr>
</tbody>
</table>

Then, click on ☑️ to save.

Examine the Planned Independent Requirements generated for **DXTR2###** and save them with ☑️.

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DXTR2###</td>
<td>DL60</td>
<td>AG</td>
<td></td>
<td></td>
<td>33</td>
<td>32</td>
<td>38</td>
<td>32</td>
<td>32</td>
<td>30</td>
<td>41</td>
<td>36</td>
</tr>
</tbody>
</table>

Finally, examine the requirements for **DXTR3###** and save them with ☑️.

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</tr>
</thead>
<tbody>
<tr>
<td>DXTR3###</td>
<td>BL08</td>
<td>AS</td>
<td></td>
<td></td>
<td>33</td>
<td>32</td>
<td>38</td>
<td>32</td>
<td>32</td>
<td>36</td>
<td>41</td>
<td>36</td>
</tr>
</tbody>
</table>

**Note:** DXTR1### makes up 40%, DXTR2### makes up 30% and DXTR3### another 30% of the production plan created in your Sales and Operations Plan. How is this derived?

<table>
<thead>
<tr>
<th>SOP plan individual product group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
</tr>
<tr>
<td>Production</td>
</tr>
<tr>
<td>Slack level</td>
</tr>
<tr>
<td>Daily driver</td>
</tr>
<tr>
<td>Daily supply</td>
</tr>
<tr>
<td>Target daily supply</td>
</tr>
</tbody>
</table>

Click on the exit icon ☐️ to return to the SAP Easy Access screen.
Review Demand Management

**Task**  Review the requirements for a product group.  

**Short Description**  Review the requirements for the product group to ensure that there are production requirements for the individual production items.  

**Name (Position)**  Hiro Abe (Plant Manager Dallas)

To review planned requirements, follow the menu path:  

**Menu path**  

Logistics ➤ Production ➤ Production Planning ➤ Demand Management ➤ Planned Independent Requirements ➤ Display

Select the **Product group** indicator, enter Product group **PG-DXTR###**, Plant **DL00**, and select (Enter).

On the Table tab, review the Planned Independent Requirements for the Deluxe Touring bike product group by material.

On the Sched. lines tab, review the requirement dates, planned quantities, values, and total planned quantities.
Select (Next item) to move to the next material.

Click on the exit icon to return to the SAP Easy Access screen.
Run MPS with MRP

**Task** Run Master Production Scheduling (MPS).

**Short Description** Run Master Production Scheduling (MPS) to generate a series of planned orders that satisfy the requirements from SOP and demand management. Concurrently with MPS, the MRP materials will be processed leading to the generation of planned orders for dependent requirements that have been created by the BOM explosion process.

**Name (Position)** Jun Lee (Production Supervisor)

To run Master Production Scheduling, follow the menu path:

**Menu path**

Logistics ► Production ► Production Planning ► MPS ► MPS ► Total Planning ► Online

Enter Plant **DL00**, Processing key **NETCH**, select 2 (Purchase requisition in opening period), 3 (Schedule lines), 1 (MRP list), 1 (Adapt planning data (normal mode)), and 1 (Determination of Basic Dates for Planned). Then, select **Process MRP materials** and **Display list**.

**Master Production Scheduling Planning Run**

<table>
<thead>
<tr>
<th>Scope of planning</th>
<th>Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DL00</td>
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</tbody>
</table>

**MRP control parameters**

<table>
<thead>
<tr>
<th>Processing key</th>
<th>Create purchase req.</th>
<th>Schedule lines</th>
<th>Create MRP list</th>
<th>Planning mode</th>
<th>Scheduling</th>
</tr>
</thead>
<tbody>
<tr>
<td>NETCH</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Net Change in Total Horizon</th>
<th>Purchase requisitions in opening period</th>
<th>Schedule lines</th>
<th>MRP list</th>
<th>Adapt planning data (normal mode)</th>
<th>Determination of Basic Dates for Planned</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

**Planning date** 07/20/2018

**Process control parameters**

- Parallel processing
- Display list

**User exit**

- User exit key
- User exit parameter

Select **(Enter)**. A warning message will appear asking you to check input parameters. Press Enter to confirm and bypass the warning message.
To start the planning run, click on (Continue) and review the planning details from the List Display.

**Note:** Your list may look different. However, you should find your red deluxe touring bike (DXTR3###) in the list.

Click on the exit icon 🚪 to return to the SAP Easy Access screen.
Review Stock/Requirements List

**Task**  Review the Stock/Requirements List.  

**Short Description**  Review the Stock/Requirements List for your deluxe touring bikes.  

**Name (Position)**  Lars Iseler (Production Order Worker)

The Stock/Requirements List is a dynamic list which dynamically changes whenever a transaction occurs using the given material. Display and review the Stock/Requirements List for all materials in the deluxe touring bike product group on hand and the demand that exists against these products. The report shows that there is no stock and therefore nothing is available for use at this time.

To review the Stock/Requirements List, follow the menu path:

1. **Logistics ▶ Production ▶ Production Planning ▶ MPS ▶ Evaluations ▶ Stock/Reqmts List**

On the Collective access tab, enter Plant **DL00**, select and enter Product group **PG-DXTR###**, and click on (Enter). This will allow you to see the status of all products within your planning group.

Select (Highlight) the three materials that make up your product group.

Then, select **Selected stock/requirements lists** and **Show Overview Tree**.
Select material DXTR3###. Choose "Switch to Period Totals". This will allow you to see the planned independent requirements, planned receipts, and ATP quantities based on time; days, weeks, or months.

Select to go back to the individual lines.

To view the details of the first planned order (PldOrd), select "Element Details".

Select "Pegged Requirements".
You can see that this planned order is to fulfill our Safety Stock and the first planned independent requirement that was created when we disaggregated our SOP.

Select (Graphic) to see a graphical view of this information.

Click on the exit icon 🥇 twice to return to the SAP Easy Access screen.
CASE STUDY

Convert Planned Order into Production Order

**Task** Convert a planned order into a production order.  

**Time** 10 min

**Short Description** Convert a planned order generated in the MPS/MRP run to a production order. The stock requirements list displays the suggested planned orders from the MPS run.

**Name (Position)** Lars Iseler (Production Order Worker)

To convert planned orders into production orders, follow the menu path:

**Logistics ► Production ► MRP ► Evaluations ► Stock/Reqmts List**

Enter Material **DXTR3###**, Plant **DL00**, and click on **(Enter)**. Then, double-click on the second planned order.

In the Additional Data screen, click on **(Convert planned order to production order).**

Determine the status of your order by clicking on **.** What does this mean?
**Note:** When you converted the planned order to a production order scheduling takes place, an availability check was automatically carried out and a reservation was placed on the materials specified within the bill of materials. The order was also automatically released when the production order was created.

Click on ☐ to go back to the header screen and save your production order with ☐.

**Note:** When you save the production order the system will automatically calculate the planned costs for the production order and the production order is given a number.

Make sure you record your production order number.

Select ☐ (Refresh) to refresh the Stock/Requirements List. In the MRP Element column the planned order **PldOrd** that you selected should now have changed into a production order **PrdOrd**.

Click on the exit icon ☐ to return to the SAP Easy Access screen.
Receive Goods in Inventory

**Task** Receive goods in the Dallas plant.

**Short Description** Receive enough goods in the Dallas storage locations to start the production process.

**Name (Position)** Susanne Castro (Receiving Clerk)

Usually, at this point the purchasing department in Dallas would take over and procure enough raw materials from vendors to fill the inventory so that the production process can be initiated. In this case study, we are bypassing this procurement process (this process is explained in the MM unit in detail). Because the inventory for all DXTR1### components is empty, we will assume that we find 100 pieces each in the storage location.

To receive goods in the inventory, follow the menu path:

- **Logistics** ► **Materials Management** ► **Inventory Management** ► **Goods Movements** ► **Goods Receipt** ► **Other**

Make sure you click on **Other** and not on **Other (MIGO)**. This should produce the following screen.

**Menu path**

**Enter Other Goods Receipts: Initial Screen**

- **Document Date**: 07/20/2010
- **Posting Date**: 07/20/2010
- **Movement Type**: 561
- **Plant**: DL00
- **Storage Location**: 
- **Doc Header Text**: 
- **Special Stock**: 
- **Reason for Movement**: 
- **Suggest Zero Lines**: 

Enter today as Document and Posting Date, Movement Type 561 (Receipt per initial entry of stock balances into unr.-use), Plant DL00, and leave Storage Location blank. Then, press Enter or click on ．

In the Enter Other Goods Receipts: New Item screen, enter the following data. Each one of these ten materials are components that you later on need in your production order. Note that all materials are stored in the raw materials storage location in Dallas except the touring wheel assembly (first component in the list) which is a semi-finished good.
### Material

<table>
<thead>
<tr>
<th>Material</th>
<th>Quantity</th>
<th>SLoc</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRWA1### (Touring Aluminum Wheel Assembly)</td>
<td>100</td>
<td>SF00</td>
</tr>
<tr>
<td>TRFR3### (Touring Frame-Red)</td>
<td>100</td>
<td>RM00</td>
</tr>
<tr>
<td>DGAM1### (Derailleur Gear Assembly)</td>
<td>100</td>
<td>RM00</td>
</tr>
<tr>
<td>TRSK1### (Touring Seat Kit)</td>
<td>100</td>
<td>RM00</td>
</tr>
<tr>
<td>TRHB1### (Touring Handle Bar)</td>
<td>100</td>
<td>RM00</td>
</tr>
<tr>
<td>PEDL1### (Pedal Assembly)</td>
<td>100</td>
<td>RM00</td>
</tr>
<tr>
<td>CHAN1### (Chain)</td>
<td>100</td>
<td>RM00</td>
</tr>
<tr>
<td>BRKT1### (Brake Kit)</td>
<td>100</td>
<td>RM00</td>
</tr>
<tr>
<td>WDOC1### (Warranty Document)</td>
<td>100</td>
<td>RM00</td>
</tr>
<tr>
<td>PCKG1### (Packaging)</td>
<td>100</td>
<td>RM00</td>
</tr>
</tbody>
</table>

Before pressing Enter compare your screen with the screenshot shown below. Remember that your material numbers are different.

<table>
<thead>
<tr>
<th>Items</th>
<th>Item Material</th>
<th>Quantity</th>
<th>Unit Sloc Batch</th>
<th>Re Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TRWA1000</td>
<td>100</td>
<td>SF00</td>
<td>D100</td>
</tr>
<tr>
<td>2</td>
<td>TRFR3000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
<tr>
<td>3</td>
<td>DGAM1000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
<tr>
<td>4</td>
<td>TRSK1000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
<tr>
<td>5</td>
<td>TRHB1000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
<tr>
<td>6</td>
<td>PEDL1000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
<tr>
<td>7</td>
<td>CHAN1000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
<tr>
<td>8</td>
<td>BRKT1000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
<tr>
<td>9</td>
<td>WDOC1000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
<tr>
<td>10</td>
<td>PCKG1000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
</tbody>
</table>

After pressing Enter you should see the following screen.

<table>
<thead>
<tr>
<th>Items</th>
<th>Item Material</th>
<th>Quantity</th>
<th>Unit Sloc Batch</th>
<th>Re Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TRWA1000</td>
<td>100</td>
<td>SF00</td>
<td>D100</td>
</tr>
<tr>
<td>2</td>
<td>TRFR3000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
<tr>
<td>3</td>
<td>DGAM1000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
<tr>
<td>4</td>
<td>TRSK1000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
<tr>
<td>5</td>
<td>TRHB1000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
<tr>
<td>6</td>
<td>PEDL1000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
<tr>
<td>7</td>
<td>CHAN1000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
<tr>
<td>8</td>
<td>BRKT1000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
<tr>
<td>9</td>
<td>WDOC1000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
<tr>
<td>10</td>
<td>PCKG1000</td>
<td>100</td>
<td>RM00</td>
<td>D100</td>
</tr>
</tbody>
</table>

Save your goods receipt with ☐ and record the material document number. Then, click on the exit icon ☐ to return to the SAP Easy Access screen.

Material document number

☐
Issue Goods to Production Order

Task  Issue goods to a production order.  
Time 10 min

Short Description  Now that all necessary components are on stock issue them to your production order in precise quantity.

Name (Position)  Sanjay Datar (Warehouse Employee)

The goods issue process is fully defined in the production order, BOM, and routing. The quantities and the materials are reserved for this specific production order, will be withdrawn with reference to the order number, and will be used to assign actual costs to the production order for managerial accounting purposes.

To issue goods to a production order, follow the menu path:

**Logistics ▶ Production ▶ Shop Floor Control ▶ Goods Movements ▶ Goods Issue**

This should produce the following screen.

```
Enter Goods Issue: Initial Screen

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Date</td>
<td>07/29/2010</td>
</tr>
<tr>
<td>Posting Date</td>
<td>07/29/2010</td>
</tr>
<tr>
<td>Movement Type</td>
<td>261</td>
</tr>
<tr>
<td>Special Stock</td>
<td></td>
</tr>
<tr>
<td>Reason for Movement</td>
<td></td>
</tr>
<tr>
<td>Suggest Zero Lines</td>
<td></td>
</tr>
<tr>
<td>Plant</td>
<td>DL00</td>
</tr>
<tr>
<td>Storage Location</td>
<td></td>
</tr>
</tbody>
</table>
```

Enter **today** as Document and Posting Date, Movement Type **261** (Consumption for order from warehouse), Plant **DL00**, and leave Storage Location blank. Then, click on the **To Order...** button.

Enter your **production order number** from two tasks back.

If you have not written down your production order number you can find it in the system. In order to do so, in the Order field press **F4** or click on the search icon 📦. In the Order Number (1) screen, use the icon on the far right 🔄 to display a list of all tabs. Please select the Production orders using the info system tab. On this tab, enter your material **DXTR3###** in the Material field and click on 📦. Double-click on the result row to adopt your production order number into the initial screen.
Once you have found and entered your production order number, click on ✔ to continue.

An itemized list will appear. It lists all the materials and their respective quantities that need to be issued to your order. You need to tell the system what Storage Location the materials should be withdrawn from. For the wheel assembly (TRWA1###), enter SF00 (Semi-finished goods) and for all other materials RM00 (Raw materials) in the SLoc fields. Before pressing Enter compare your screen with the one shown below.

Click on the Adopt + Details button. A series of screens will appear asking you to copy in the requirements for each of the dependent requirements. Click on ✔ to accept the details for each material.

Finally, on the Enter Goods Issue: Overview screen you will see all of the goods issue quantities for each of the materials.
Click on (Post) and record the material document number.

Click on the exit icon to return to the SAP Easy Access screen.

Material document number

□
Review Production Order Status

**Task** Review the production order status.

**Short Description** Review the current production order with respect to the status of the order.

**Name (Position)** Michael Brauer (Shop Floor Worker 4)

To display the production order, follow the menu path:

**Menu path**

Logistics ► Production ► Shop Floor Control ► Order ► Display

Enter the number of your **production order**.

If you have not written down your production order number you can find it in the system. In order to do so, in the Order field press **F4** or click on the search icon. In the Order Number (1) screen, use the icon on the far right to display a list of all tabs. Please select the Production orders using the info system tab. On this tab, enter your material **DXTR3###** in the Material field and click on . Double-click on the result row to adopt your production order number into the initial screen.

When your production order number is entered, click on . Note that the order status has changed and review it by clicking on again.

You did a goods issue to the production order in the last task. Now, you want to review the cost assigned to the order, the material document, and the corresponding accounting document.

In order to do so, click on to go back to the header screen and then in the system menu select:

**Goto ► Costs ► Analysis**
Here you can see the costs that were assigned to the production order from our goods issue.

Click on the exit icon 📈 to go back to the SAP Easy Access menu.

<table>
<thead>
<tr>
<th>Cost Elem</th>
<th>Cost Element Text</th>
<th>Origin</th>
<th>t Total target costs</th>
<th>t Total actual costs</th>
<th>t Target/actual var.</th>
<th>TrVar (%)</th>
<th>Currency</th>
</tr>
</thead>
<tbody>
<tr>
<td>720100</td>
<td>Raw Material Consumption Expenditure</td>
<td>DLUSROAN1000</td>
<td>0.00</td>
<td>3,225.00</td>
<td>3,225.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720100</td>
<td>Raw Material Consumption Expenditure</td>
<td>DLUSROAAK1000</td>
<td>0.00</td>
<td>8,600.00</td>
<td>8,600.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720100</td>
<td>Raw Material Consumption Expenditure</td>
<td>DLUSROAAR1000</td>
<td>0.00</td>
<td>2,100.00</td>
<td>2,100.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720100</td>
<td>Raw Material Consumption Expenditure</td>
<td>DLUSROABB1000</td>
<td>0.00</td>
<td>1,075.00</td>
<td>1,075.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720100</td>
<td>Raw Material Consumption Expenditure</td>
<td>DLUSROACE1000</td>
<td>0.00</td>
<td>1,935.00</td>
<td>1,935.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720100</td>
<td>Raw Material Consumption Expenditure</td>
<td>DLUSROACH1000</td>
<td>0.00</td>
<td>430.00</td>
<td>430.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720100</td>
<td>Raw Material Consumption Expenditure</td>
<td>DLUSROABD1000</td>
<td>0.00</td>
<td>3,010.00</td>
<td>3,010.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720100</td>
<td>Raw Material Consumption Expenditure</td>
<td>DLUSROADH1000</td>
<td>0.00</td>
<td>43.00</td>
<td>43.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720100</td>
<td>Raw Material Consumption Expenditure</td>
<td>DLUSROAEH1000</td>
<td>0.00</td>
<td>946.00</td>
<td>946.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720100</td>
<td>Semi-Finished Consumption Expenditure</td>
<td>DLUSROAFH1000</td>
<td>0.00</td>
<td>3,010.00</td>
<td>3,010.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>USD</td>
</tr>
</tbody>
</table>
**Confirm Production Completion**

**Task** Confirm production order completion.  
**Time** 10 min

**Short Description** Confirm completion for your production order.

**Name (Position)** Michael Brauer (Shop Floor Worker 4)

When the assembly has been completed for the current production order, we need to confirm that certain procedures and activities have been completed and record the quantity of the end product that has been manufactured.

To confirm production completion, follow the menu path:

**Logistics ► Production ► Shop Floor Control ► Confirmation ► Enter ► For Order**

Enter your **production order** number and click on ✅.

Select **Final Confirm.** and **Clear Reservation.** In the Yield to conf. field, enter the amount of bikes you were supposed to produce for this order. Remember that your amount might be different from the screen below.

![Confirmation of Production Order Enter: Actual Data](image)

Then, change the **Execution start** to **1 hour earlier** than the default time.

![To Be Confirmed](image)
Click on checkmark icon (✓) and save your entries with save icon (💾).

**Note:** When the confirmation is saved, labor costs for the order are calculated automatically. The quantity yield also establishes the parameters for the goods receipt into Inventory.

Click on the exit icon (🚪) to return to the SAP Easy Access screen.
Receive Goods from Production Order

**Task** Post a goods receipt from production order.

**Short Description** Post a goods receipt from your production order.

**Name (Position)** Susanne Castro (Receiving Clerk)

Receive the completed products into finished goods inventory. Check the quantity purposed against the quantity specified in the production order and the quantity specified during confirmation. If there are any discrepancies, the system will decide if an error or warning message should be generated depending upon the deviation identified.

To post a goods receipt, follow the menu path:

- **Logistics** ► **Production** ► **Shop Floor Control** ► **Goods Movements** ► **Goods Receipt**

This produces the following screen.

**Goods Receipt for Order: Initial Screen**

- **Movement Type** 101
- **Order** 1069020
- **Plant** DL00
- **Stor. Location** FG00

Enter Movement Type 101 (Goods receipt for order to warehouse), your **production order number**, Plant DL00, Stor. Location FG00 (Finished Goods), and select **Adopt + Details**.
Ensure that the quantity to be placed into inventory and the storage location are correct. Then, click on \( \square \) to accept the details for the new bikes received from production.

In the overview screen, review the item to ensure that all the data is correct.

- Movement Type → 101 (goods receipt into Inventory)
- Storage Location → FG00 (Inventory)
- Quantity → should equal the amount that you confirmed in the previous task

Click on \( \square \) to post the goods receipt. When you save this material document the actual value of the material produced was entered into the production order.

Record the material document number.

Click on the exit icon \( \square \) to return to the SAP Easy Access screen.
Review Costs Assigned to Production Order

**Task** Review costs assigned to your production order.

**Time** 5 min

**Short Description** Display and review the costs that have been assigned to your production order.

**Name (Position)** Jamie Shamblin (Cost Accountant)

To display costs assigned, follow the menu path:

**Menu path**

**Logistics ► Production ► Shop Floor Control ► Order ► Display**

Enter your production order number, and click on (Enter).

In the system menu, select:

**Goto ► Costs ► Analysis**

<table>
<thead>
<tr>
<th>Cost Element (ID)</th>
<th>Cost Element Name (Text)</th>
<th>Origin</th>
<th>1: Target total cost</th>
<th>2: Actual total cost</th>
<th>Target/actual var</th>
<th>% var</th>
<th>Currency</th>
</tr>
</thead>
<tbody>
<tr>
<td>720000</td>
<td>Raw Material Consumption Expense</td>
<td>D-UOM2-DOC1000</td>
<td>0.00</td>
<td>150.50</td>
<td>150.50</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720000</td>
<td>Raw Material Consumption Expense</td>
<td>D-UOM2-BMT1000</td>
<td>0.00</td>
<td>43.00</td>
<td>43.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720000</td>
<td>Raw Material Consumption Expense</td>
<td>D-UOM2-HMV1000</td>
<td>0.00</td>
<td>43.00</td>
<td>43.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720000</td>
<td>Raw Material Consumption Expense</td>
<td>D-UOM2-PEL1000</td>
<td>0.00</td>
<td>1,936.00</td>
<td>1,936.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720000</td>
<td>Raw Material Consumption Expense</td>
<td>D-UOM2-T111100</td>
<td>0.00</td>
<td>1,075.00</td>
<td>1,075.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720000</td>
<td>Raw Material Consumption Expense</td>
<td>D-UOM2-T818100</td>
<td>0.00</td>
<td>2,110.00</td>
<td>2,110.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720000</td>
<td>Raw Material Consumption Expense</td>
<td>D-UOM2-TRR1000</td>
<td>0.00</td>
<td>8,000.00</td>
<td>8,000.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720000</td>
<td>Raw Material Consumption Expense</td>
<td>D-UOM2-T181100</td>
<td>0.00</td>
<td>3,225.00</td>
<td>3,225.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>720000</td>
<td>Raw Material Consumption Expense</td>
<td>D-UOM2-T9A1000</td>
<td>0.00</td>
<td>9,460.00</td>
<td>9,460.00</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>741100</td>
<td>Finished Goods</td>
<td>D-UOM2-G111100</td>
<td>0.00</td>
<td>60,200.00</td>
<td>60,200.00</td>
<td>USD</td>
<td></td>
</tr>
</tbody>
</table>

Now that the finished products have been received in the Inventory, the Manufacturing Output Settlement Variance has been added. How is this figure calculated by the system?

Click on the exit icon to return to the SAP Easy Access screen.
Settle Costs of Production Order

**Task** Settle costs of your production order.  

**Time** 20 min

**Short Description** Settle the costs of your production order. The costs are temporarily captured in the production order and they need to be assigned to an appropriate cost object. Compare the actual costs to the planned costs to identify any deviations or potential problems in this regard.

**Name (Position)** Jamie Shamblin (Cost Accountant)

To settle costs of a production order, follow the menu path:  

**Menu path**  
Logistics ► Production ► Shop Floor Control ► Period-End Closing ► Settlement ► Individual Processing

If you have to input the Controlling Area, enter NA00, and click on 🔄.

<table>
<thead>
<tr>
<th>Actual Settlement: Order</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Table" /></td>
</tr>
</tbody>
</table>

Enter your production order number, the current month as Settlement period (e.g. 007 for July), the current month as Posting period, and the current year as Fiscal year. Make sure that Test Run is selected.

Then, click on 🔄 (Execute).
Click on (Detail lists). In the system menu, choose:

**Environments ➤ Report**

Then, double-click on **Actual/Plan/Variance** to select the report.

Because no cost planning has been taking place before the production order was executed, the variance between actual and plan costs equals the actual costs.

Click on (Detail lists) to go back. Then, select **Yes** and click on (Detail lists) twice.

Deselect **Test Run** and execute again with (Detail lists). Click on (Detail lists) and select (Report). Choose report **Actual/Plan/Variance**.
Note: The manufacturing output settlement is higher than the consumption expenses for raw materials and semi-finished goods? Review and explain the expenses and the settlements of your production order in detail. How is the balance derived?

Click on 🖼, choose Yes and click on 🖼 again to return to the SAP Easy Access screen.