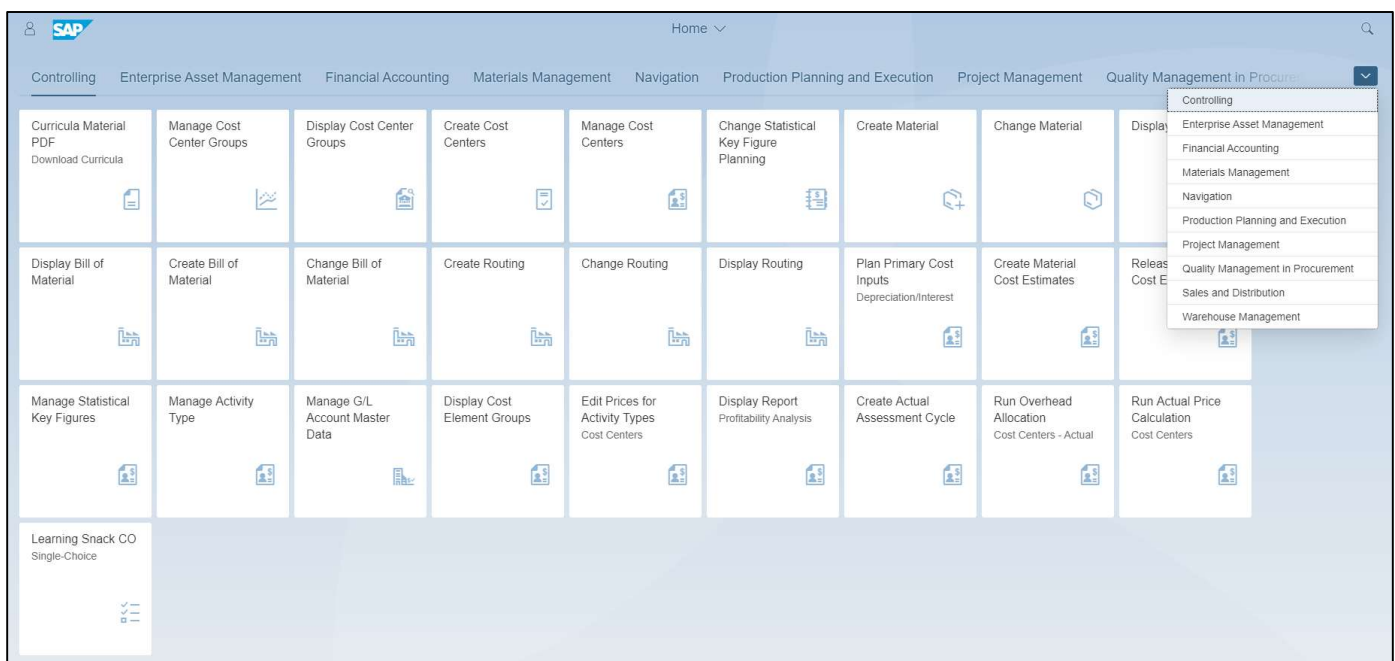FIT5101   Enterprise Systems

Worksheet 01

Introduction to SAP S/4 HANA

Version 2021.00

Introduction to SAP ERP

SAP's Enterprise Resource Planning (ERP) system is designed to assist an organization with the integration and management of business processes. The system deals with the problems of organising and executing the millions of transactions that are fundamental to many large businesses. SAP is the leader in the ERP market. SAP ERP is a very large system which incorporates over 30,000 tables, and 50,000 transactions. This tutorial is an introduction designed to assist you with familiarising yourself with the SAP ERP basics utilising SAP's latest ERP release: S/4HANA. Traditionally SAP's ERP system could operate on a number of different databases (Oracle. SQL Server. DB2 etc). However, SAP S/4HANA has been designed to take advantage of SAP HANA database's in-memory capabilities.

Getting Started

SAP S/4HANA can operate on a variety of personal computers using different operating systems. You can access S/4HANA either through the traditional interface (SAPGUI) or the new interface (Fiori) built with HTML5 based on the UI5 standard. But no matter which equipment, operating system or interface which is used, there are some necessary requirements:

Log On details
Due to the value of the information stored in the ERP system it is necessary to control the access to the software. The SAP administrator would need to establish a user account for each user who intends to use the ERP system. Each user account is identified by a username and requires a password for security. Each user account is also allocated a security profile which determines the data a user is allowed to view and change.

The other log on detail you require is the **Client** number. A **Client** is a set of self-contained tables required for processing transactions in the SAP system. A user in one client cannot change the data in another **Client**.   You will need to know your **username**, **password** and **Client** before you attempt to access the system. These can be obtained from your workshop leader.

✍ *Identify your log on details*

Client	352
User Name	LEARN-###
Password	

Logging on to the SAP System

There are various techniques to open **SAP S/4HANA**. For the purpose of these exercises you will access the ERP system via a web browser.
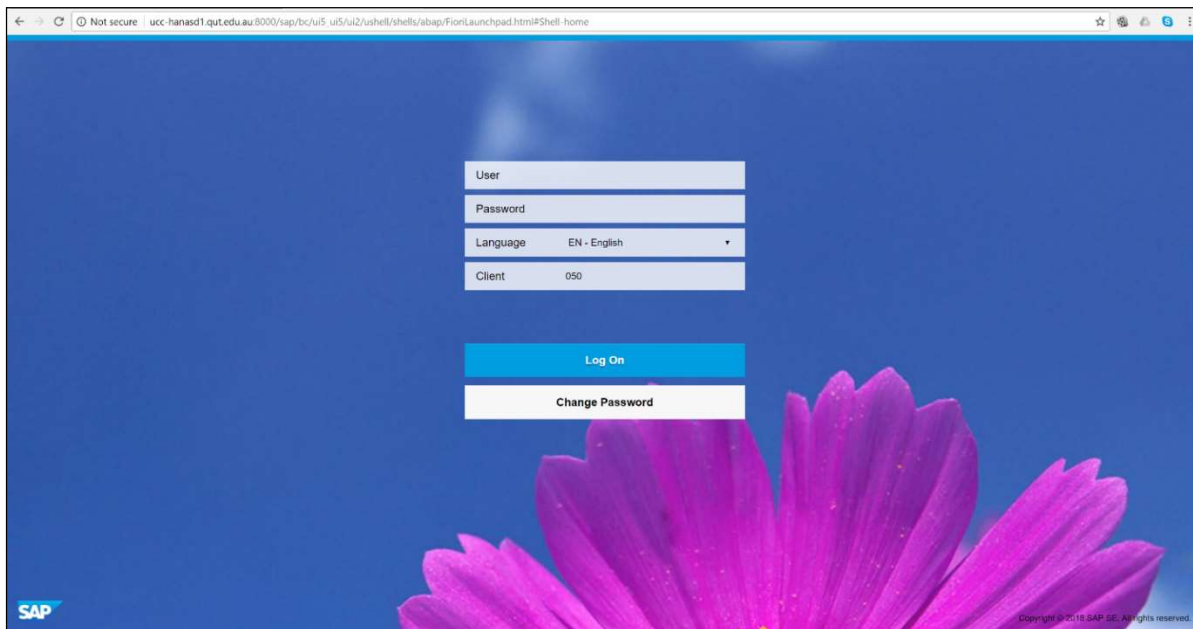
1   Open   a web browser.

A screen appears which allows you to select which server you want to logon to. Companies often have more than one SAP solution server.

2.   Type   https://m29z.ucc.ovgu.de/sap/bc/ui2/flp?sap- in the Address bar.

3.   Press   <ENTER> to display the S/4HANA logon screen.

The S/4HANA logon screen appears similar to the one below:

Input Areas of the Screen

User   Uniquely identifies you to the ERP system. Your **User Id** will be allocated by your workshop leader and remain the same throughout the unit
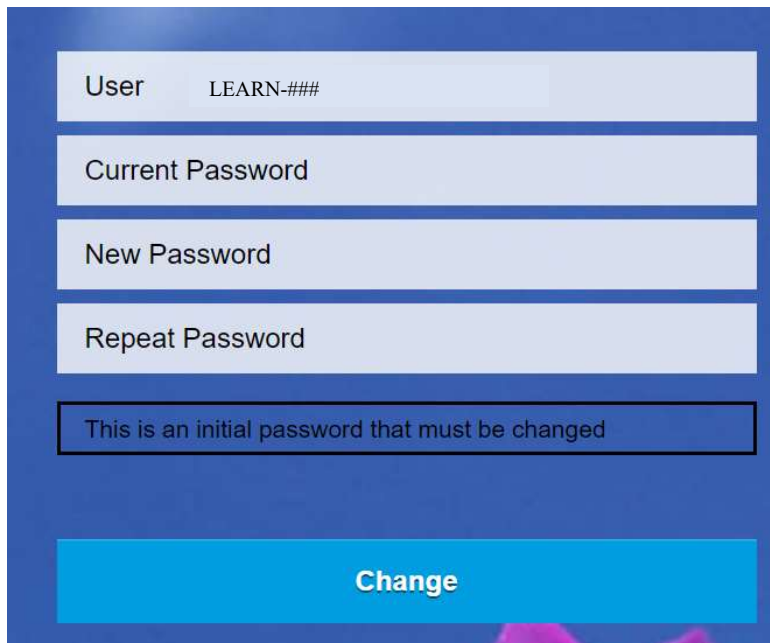
Password   Uniquely identifies you to the ERP system.

Language   Identifies the language the ERP will be displayed in. Our ERP system default is English.

Client   A Client identifies a business entity in the ERP system. Each Client contains data that is separate from data in other clients. Different clients are established for testing and developing different aspects of the system and for training purposes.

4.   Type   your User Id **LEARN-###** where ### is the number assigned to you.

5.   Press   **<TAB>** to move the cursor to the **Password** text box.

6.   Type   your **Password** which will supplied by the workshop leader.

To hide your new password from other people, it is hidden by ●● as you type.

7.   Type   the **Client** details as provided by the workshop leader.

8.   Click   [Log On]   to authorise your details.

A new screen will appear which allows you to enter a new password to replace the temporary one you were supplied with.

User	LEARN-###
Current Password	
New Password	
Repeat Password	
This is an initial password that must be changed	
Change	

You now need to create a new password. You will be the only person who knows this password, so it is important to create a password which is easy to remember. However, the ERP system has some rules about what it allows to be a password. These rules can be changed by the system administrator. But in general, the following applies:

MONASH University

Password Rules

Passwords must be at least 6 characters.
Passwords are case-sensitive.
Passwords cannot start with a blank space, question mark(?). or an exclamation mark (!).
The password cannot be any of the previous 5 passwords.

---

9. Type   your **Current Password**.

10. Type   your **New Password**.

11. Type   your new password again in the **Repeat Password** field to confirm it.

12. Click   [Change]   to change your password.

After logging on to the SAP S/4HANA system the main screen appears.

SAP S/4HANA Fiori Launch Pad

The SAP Fiori launch pad home page is the first page that users see after they have logged on. It is the main entry point to SAP Fiori apps on mobile and desktop devices. The primary place where a user will look for applications is the home page. The page features tiles that allow the user to launch apps and may show additional information. The page can be personalized, and tiles can be added, removed, or bundled in groups.

Launch Pad Components

The launch pad screen has a number of screen elements you need to become familiar with:

Tiles

The tiles provide direct access to apps or content. They are similar to large icons and have a rectangular shape. The launchpad home page comes with a predefined set of groups and tiles. However, the user can also personalize the launchpad home page to reflect their individual roles by choosing from a wide range of ready-to-use tiles from the **app finder**.

Tiles differ in the content they display. They can contain an icon, a title, some informative text, numbers, and charts. The information that is shown depends on the function of the tile or app.
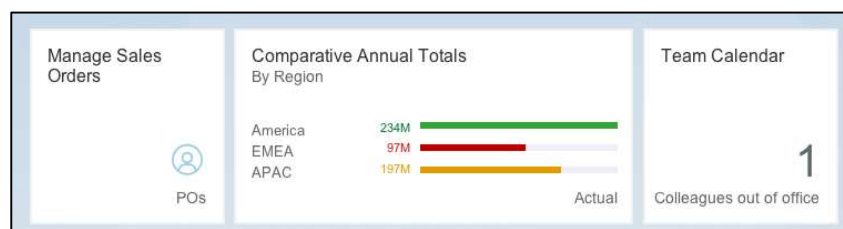
| Icon | Chart | Number |

The number of **tiles** visible on a page depends on the screen resolution. The tiles are placed below each other and are resized for smaller screens such as smart phones and tablets.

Groups

Groups are areas where related Fiori tiles are displayed. This assists the user to quickly move from one activity to a related activity.

Group Selection Bar

In the launchpad home page, tiles are usually clustered in groups. These groups are listed in a Group Selection Bar at the top of the page. When users select a group name, the page scrolls down to the selected group.

Profile Icon

The Profile Icon provides access to the **Me Area**. This area provides a number of options for customizing your Home screen. It also provides a list of the most recent tiles or objects you have worked on.

Search Icon

The Search Icon allows users to find business objects such as materials or sales orders and tiles such as Leave Request or Current Accounts Balance.

ERP Terminology

While using the SAP system you will encounter a number of ERP terms which are important to understand if you are going to understand how these systems operate.

Business Scenario: Grouping of business processes in a specific **organizational unit** that share some similar goals in the enterprise, such as purchasing, services, balance sheet preparation, production, personnel administration, and so on.

Organisational Units: An organisational unit represents any type of organisational entity found within a company, for example, subsidiaries, divisions, departments, or special project teams. These organisational units need to be mapped in the SAP ERP system as they are the locations where the various **Business Scenarios** occur. Some of the possible organisational units are displayed below:
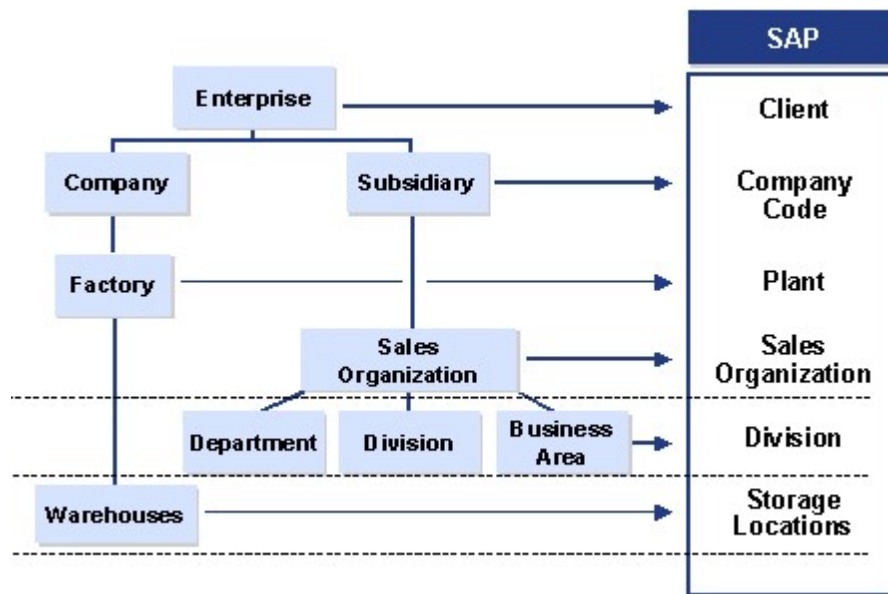
The types of **organisational units** mapped in the SAP system will depend upon which **Business scenarios** are going to be used. Some units are only relevant to certain SAP modules.

✎ *List some of the* ***Organisational Units*** *you would find in a university.*

_____

_____

_____

_____

Master Data: Business Scenarios involve various objects such as customer, vendors, products, employees etc. Data which describes these objects is referred to as **Master Data**. This data describes the various objects stored within the SAP system. This data usually remains unchanged over an extended period of time.

A **Master Data** object, such as a customer, can be used by more than module. Each module may only be concerned with certain aspects of the **Master Data**.
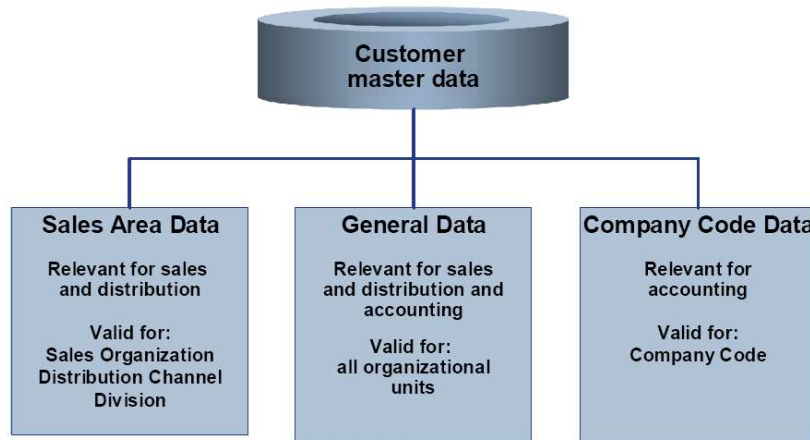
✍ List **Master Data** objects in a Student Administration system

Transactions: are application programs which execute a business processes in the ERP system. They usually result in the interaction with master data objects such as creating a customer order, posting an incoming payment, or approving a leave request. The majority of processing the SAP ERP system is related to transactions. For example the diagram below illustrates a **Transaction** the interaction between the **Master Data** objects of **Customer** and **Material** in the creation of a sales document.
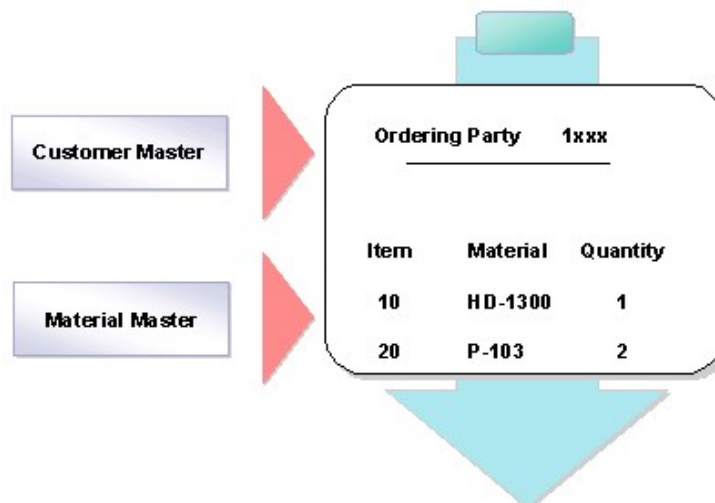
✎ *List some common **transactions** that would occur within a university.*

_____

_____

_____

Document: A data record that is generated when a transaction is carried out and contains all the predefined information such as sales document, order, pay slip etc.

Reports: Program which reads certain data elements and displays them in a list. SAP has extensive reporting facilities which enables users to access and display the data in various formats.
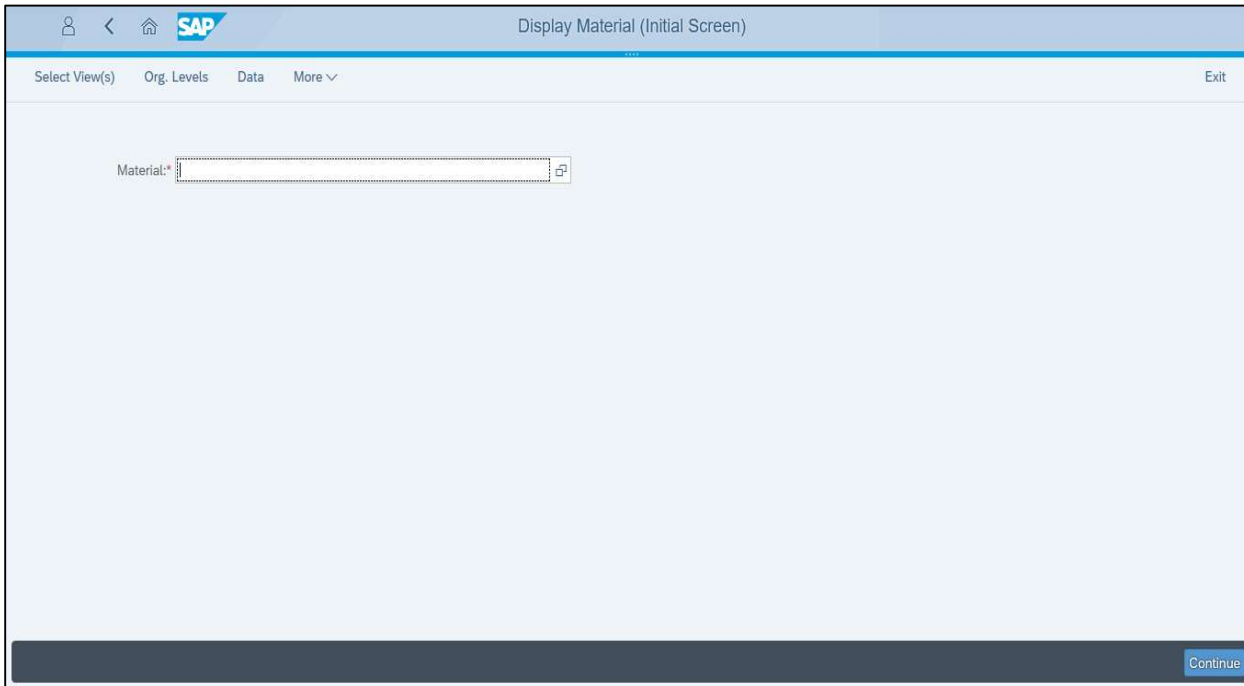
SAP S/4HANA Navigation

Master Data Navigation

An ERP system stores vast amounts of data about the various objects used in different business processes. To display the data, you require from such a large system there are various navigation techniques you need to become familiar with. SAP S/4HANA includes a number of tools which can facilitate this navigation.

This exercise requires you to find the **Master Data** for a particular product. The product we are interested in is referred to as **Deluxe Touring Bike.** The **Master Data** referring to a product is called a **Material Master**. To display the **Material Master** for a product:

13.   Click   Materials Management   on the **Group Selection Bar** to display this **Group**

14.   Click   Display Material   Fiori tile to start this transaction.

The **Display Material: Initial Screen** appears:

The screen requires the details of the Material you want to display. If you could remember the details, you can type directly into the Material field. Notice that the material field has an * which indicates that it is required information for this transaction to occur. Often it is difficult to remember the Material's details so you would need to search for it. In this exercise you want to search for a material (product) called "*Deluxe Touring Bike*",

There are usually thousands of different products in the ERP system, a facility called a **matchcode** can make the search a lot easier. A matchcode is a method of finding a certain piece of data when you do not know the specific number of that record.

To access the matchcode tool for a particular field you click the [ ] icon of the relevant field

15.   Click [ ] to display the **matchcode** dialog box.

You will notice there are numerous ways to search for a Material. We want to search by **Material description**.

16.   Type   *Deluxe*Bike** in the **Material Description:** field to display all **materials** that have a
        Material Description that includes the words **Deluxe** and **Bike.**

Note
You are able to replace letters and numbers by using **wildcards**. A summary of the different types of wildcards can be seen below:
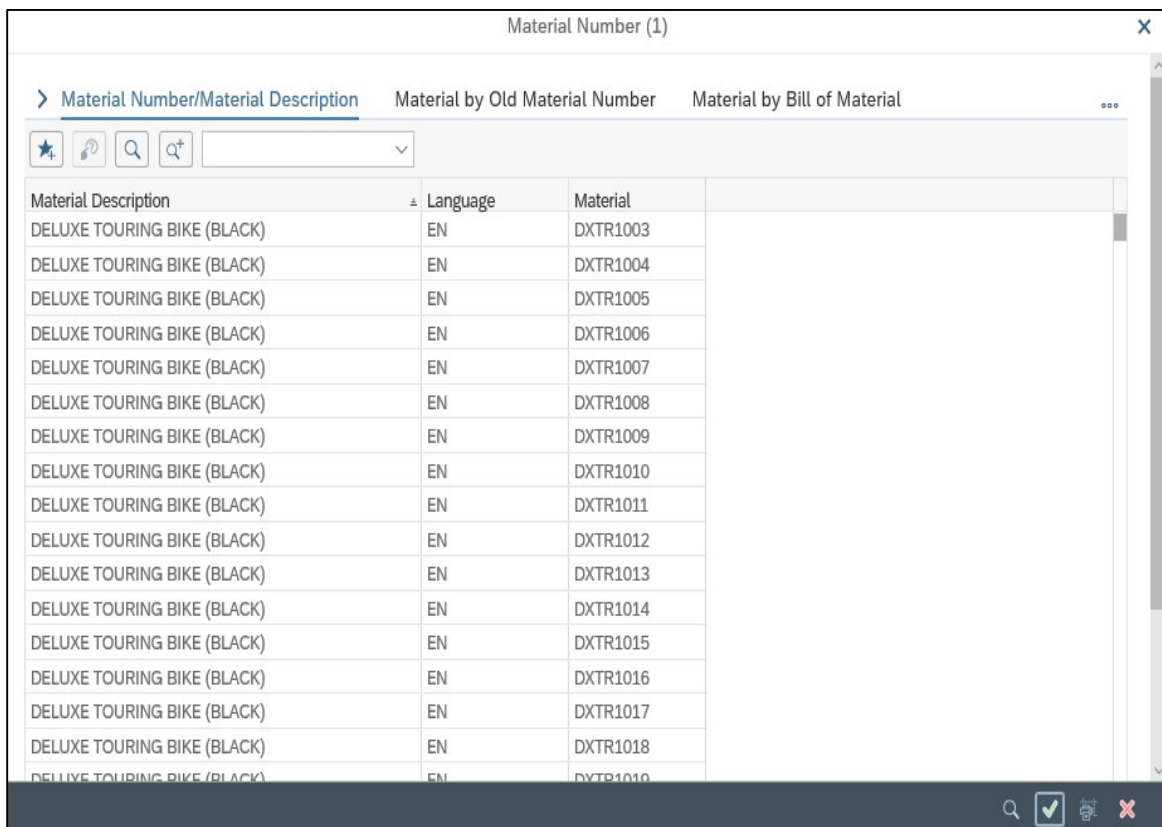
Wildcard	Represents
* and +	Characters you do not know
*	Multiple characters
+	Exactly one character

For example:

Character	Searches for everything
z*	Starting with **z**
sale	Containing the character string **sale,** such as rv**sale**07
*f+	Containing an **f** as the second-to-last character, such as rmlogi**f**a
rp+++sch	Starting with **rp**, ending in **sch**, and containing any three characters in between, such as **rp**012**sch** or **rp**inv**sch**

17.   Click   Find   in the dialog box to accept this option and display the search results.

There are several products that satisfies the Matchcode.

18.   Click   **Deluxe Touring Bike (Black)** (any one) to select it.

19.   Click   ✓ in the dialog box to accept this option and to move to the next screen.

Notice that the ERP system has automatically places the **material number** in the **Material** field.
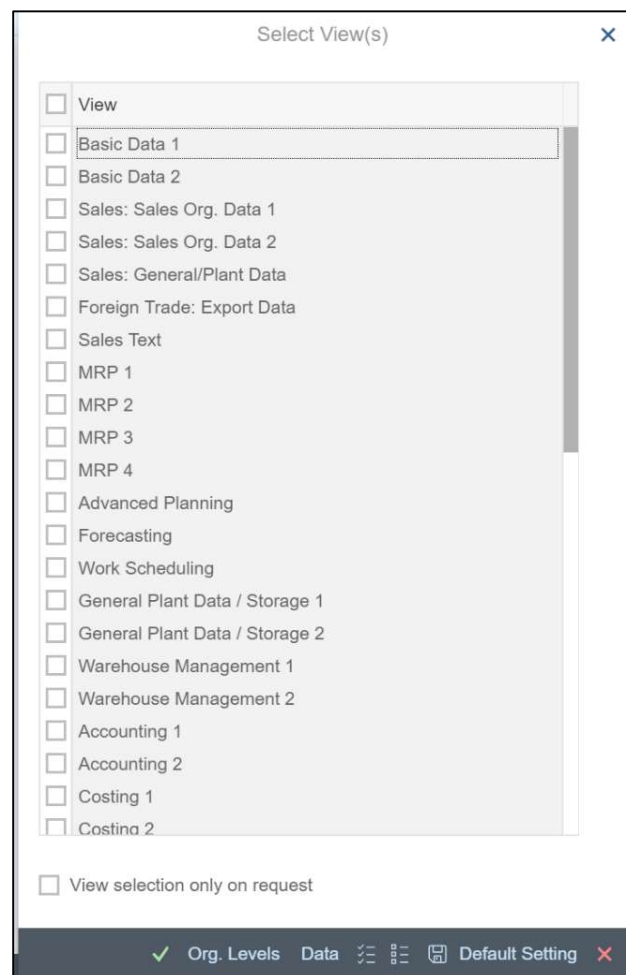
✎ *What is the Material Number for the Deluxe Touring Bike (Black)?*

    ………………………………………

Now that the relevant **Material Number** has been found you can display the **Master Data** for the product.

20.   Click   Continue or press **<ENTER>**

The **Select Views** dialog box appears on screen. The **Material Master** stores a large amount of data depending upon which Business Scenarios it is involved in within the organisation. The costing data about a material would be of little interest to someone responsible for its storage in the warehouse. The **Select View** dialog box allows the user to select which data from the **Material Master** will be displayed.

Select View(s)   ✕

☐	View
☐	Basic Data 1
☐	Basic Data 2
☐	Sales: Sales Org. Data 1
☐	Sales: Sales Org. Data 2
☐	Sales: General/Plant Data
☐	Foreign Trade: Export Data
☐	Sales Text
☐	MRP 1
☐	MRP 2
☐	MRP 3
☐	MRP 4
☐	Advanced Planning
☐	Forecasting
☐	Work Scheduling
☐	General Plant Data / Storage 1
☐	General Plant Data / Storage 2
☐	Warehouse Management 1
☐	Warehouse Management 2
☐	Accounting 1
☐	Accounting 2
☐	Costing 1
☐	Costing 2

☐ View selection only on request

✓ Org. Levels   Data ⋮≡ ⋮≡ 💾 Default Setting ✕

From this dialog box it is evident that there is a large amount of information available about a product. We are going to assume that you are assigned to the purchasing department and therefore only require details relevant to this area.

21. Click ☐ next to **Plant Stock** to select this view of the data. You will need to use the scroll bar to display the other possible views.

22. Click ✓ or press **<ENTER>**

Often products may be used at more than one organisation level in a large corporation or produced at different plants within a country or around the world. To display the product details which are relevant to you, an organisation level will need to be indicated.

23. Click **Plant** field to insert the cursor.

24. Click 🗗 to display a list of possible entries.

This displays the **Plants** that are responsible for the **Deluxe Touring Bike (Black)**.

25. Click **DC Miami** to select it. (MI00)

26. Click Choose to insert automatically insert the **Plant** number in the **Plant** field.

27. Click ✓ or press **<ENTER>** to display the product details.

You can see from this screen the stock available for this material. However, you would like to know the price which this bike sells for and its weight. This data is stored in the *Accounting 1* and *Basic Data 1* views.

You will notice that the required Views do not appear on the View toolbar. You can display the Views available by clicking [°°°] on the toolbar

✎ *What is the price and weight of the bike?*

Price: …………………………..

Weight: …………………………..

28. Click [🏠] to close this transaction and return to the Home screen.

SAP S/4HANA Reports
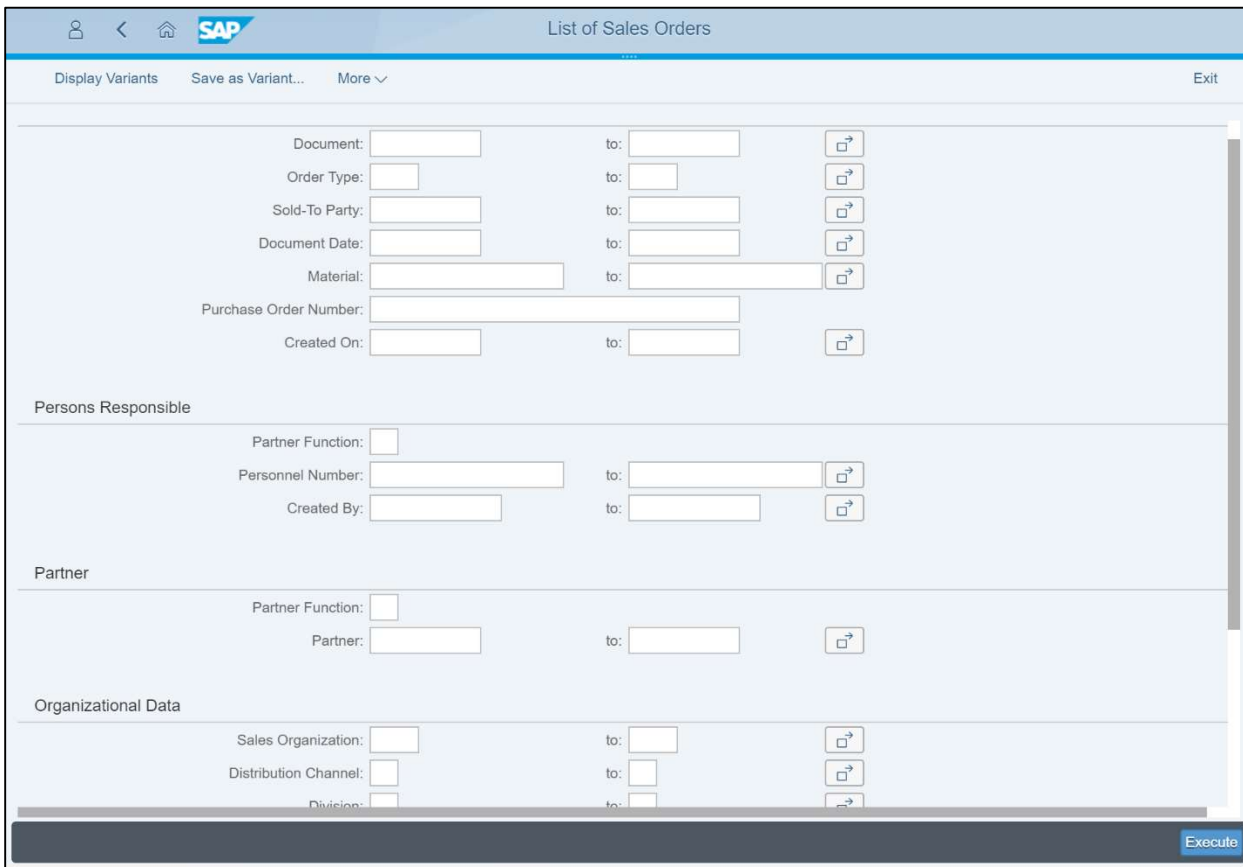
One of the major reasons a company implements an ERP system, like SAP, is to get up to date information about what is happening in the company. SAP S/4HANA has a broad range of reporting functionality. The next exercise will look at an example of common report functionality.

Your manager has asked for details sales since 2016 for East United States (UE00) sales organisation. The report is to include sale order details and total revenue. You are going to use an existing Fiori tile to display this report.

29. Choose **Sales and Distribution** on the Group Selection bar to display the associated tiles.

30. Choose List Sales Orders to display this report.

A screen appears which enables you to enter variables as **selection criteria** to help narrow the scope of the information required. As mentioned earlier the information required pertains to sales orders since 2016.

To satisfy the report's requirements you need to specify the date range.

31. Click   the **Document Date** field to select it.

32. Type   01.01.2016 as the **date from**

33. Press   **<TAB>** to move to the **date to** field.

34. Type   today's date.

You now need to limit the data to the sales for East United States (UE00).

35. Click   Sales Organisation field to select.

Notice that the ⊡ icon appears in the field enabling you to search for the required variable.

36. Click   ⊡ to display a list of available Sales Organisations.

37. Click   **UE00** to select it.

38. Click   ✓ to transfer the variable to the report selection screen.

You have now entered the required variables to filter the report data.

39. Click   Execute to run the report.

The report appears similar to below. Your report may have more data depending on more recent sales orders.

Purchase Order Number	Doc. Date	Sales doc. type	Sales document	Item	Sold-to pt	Material	OrdQty (I)	Sales unit	NV (Item)	Currency
Z999	27.05.2016	OR	1	10	5999	DXTR1999	2	EA	6,000.00	USD
Z998	27.05.2016	OR	2	10	5998	DXTR1998	5	EA	15,000.00	USD
Z997	27.05.2016	OR	3	10	5997	DXTR1997	8	EA	24,000.00	USD

Sorting

To make the report more meaningful for your manager you need to sort the Net Value of the orders from highest to lowest. This can be done by selecting the appropriate **Sort** icon ≜ ≡ from the **Application Toolbar**. The first icon is for ascending while the other is order descending.

40.   Click   ≡ to display the **Sort** dialog box.

Define Sort Order   ✕

Sort criteria   Column Set

🔍 | ∧ ∨ ≪ ≫   🔍

Column Name	≜	≡		Column Name
				Purchase Order Number
				Net Value (Item)
				Document Date
				Order Reason
			＞	Sales document type
			＜	Sales document

Transfer   Cancel
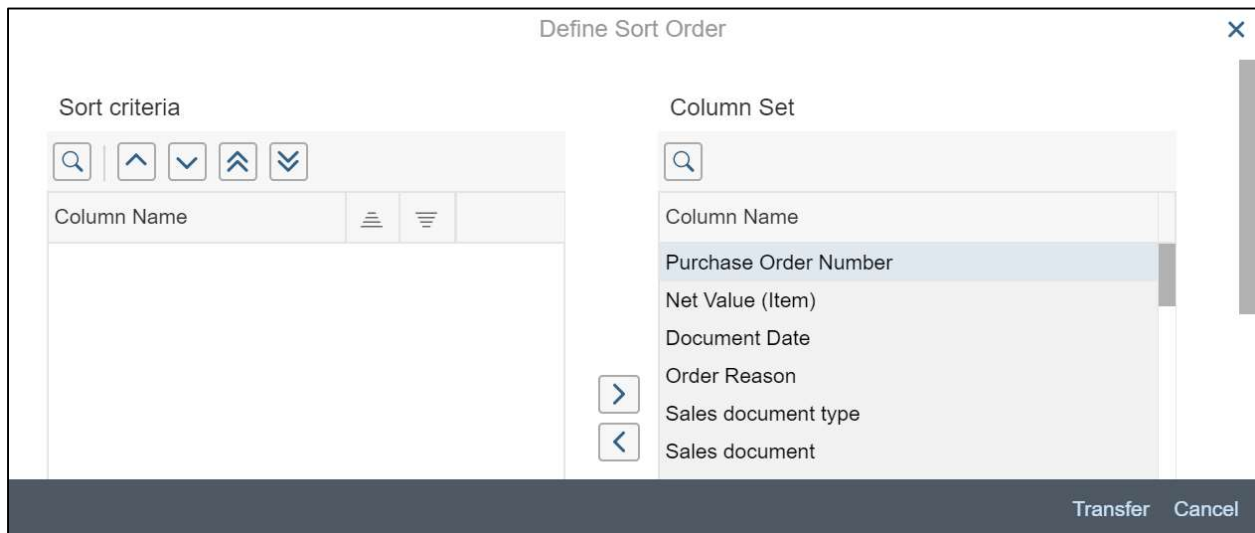
You want to sort by **Net Value (Item)** so it needs to be transferred to the Sort criteria pane.

41.   Click   **Net Value (Item)** to select this field (You may have to scroll down).

42.   Click   ＜ to transfer this field to the search criteria.

Notice that radio buttons appear to give the option to sort either ascending ≜ or descending ≡.
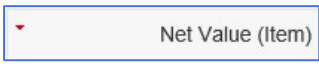
43.   Select   ≡ as the sort criteria.

44.   Click   Transfer to apply the sort criteria to the report.

The report is now sorted by **Net Value (Item)**. Notice a small triangle appears in the column heading to indicate that it is part of the sort criteria. An alternate technique for performing a sort is by clicking the column heading of the field you want to sort and then clicking the appropriate **Sort** icon.

Totals

You can perform a number of calculations on your reports to make them more meaningful. This can be done by clicking the **Total** button Σ on the **Application Toolbar**. For example to determine total Net Value (Item) for all orders.

45.   Click   [Net Value (Item)] to select this column.

46.   Click Σ to perform the calculation.

Notice a new row appears with the total of this column.

Σ	Net Value (Item)	Currency
	24,000.00	USD
	15,000.00	USD
	6,000.00	USD
.	**45,000.00**	**USD**

Drilling Down

SAP S/4HANA provides the facility to **drill down** to get further details about any item on a screen. This is done by double clicking the item you to get more details about. For example for shipping purposes you would like to determine the weight of the materials in Sales Document 3.

Once you have viewed the further details you can click the back button to return to the previous screen. At the moment we have created a report for a specific time period. But the report only indicates a matchcode for the vendor rather than the vendor's details.

47.   Double Click   **Material** *DXTR1997* to view more details about this order's materials.

If an Information window appears, click "Continue".

The order's details appear on screen.

The weight (68,080g) of the combined materials is displayed (you may need to use the scroll bar to make this field visible). Drilling down is a very powerful feature which you should familiarise yourself with.

48.   Click   <   to return to the report.

Logging Off

It is important that when you have finished working with SAP S/4HANA that you log off correctly. This will protect data but more importantly it will prevent others from unlawfully using the system under your name.

49.   Click   👤   profile icon on the **Title bar** to exit SAP ERP.

50.   Click   ⏻ Sign Out

A dialog box appears asking
to confirm your actions:

51 Click [OK] to exit the system.

You have now completed the introductory tutorial for SAP ERP: S/4HANA. As you become more familiar with the system you will find alternative ways of doing things. We have only covered the basics and there is a lot more to learn.

Summary

✎ There were a number or new ERP terms you were introduced to throughout this exercise. These are important to understand. As a summary explain the following terms:

Master data

Material Master

Transaction

Drill down

Match code

Vendor

Wildcard

Client

Organisational Unit

Transaction Codes (TCODES)

SAP provides a useful feature that allows a user to go directly to a given transaction using a unique transaction code.   This requires access to the *command window* which is not normally visible. To reveal this window, execute the following steps:

1. On the *Materials Management* page, click on *Create Material.*
2. Click on *More,* then *GUI Actions and Settings*
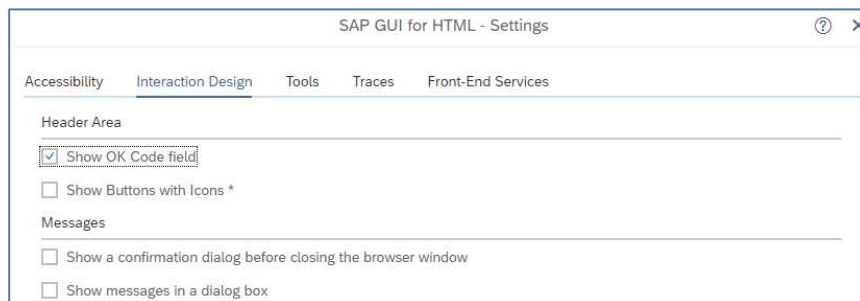
3. Tick *Show OK Code field* and then *Save* the settings.

4. The *Command window* will now be displayed:

5. To go to a given transaction, enter "/n" followed by the transaction code.
   For example, "/nME21N" will take you to the *Create Purchase Order* transaction.

6. To determine the transaction code for a given transaction, click on *More,* then *System,* then *Status:*
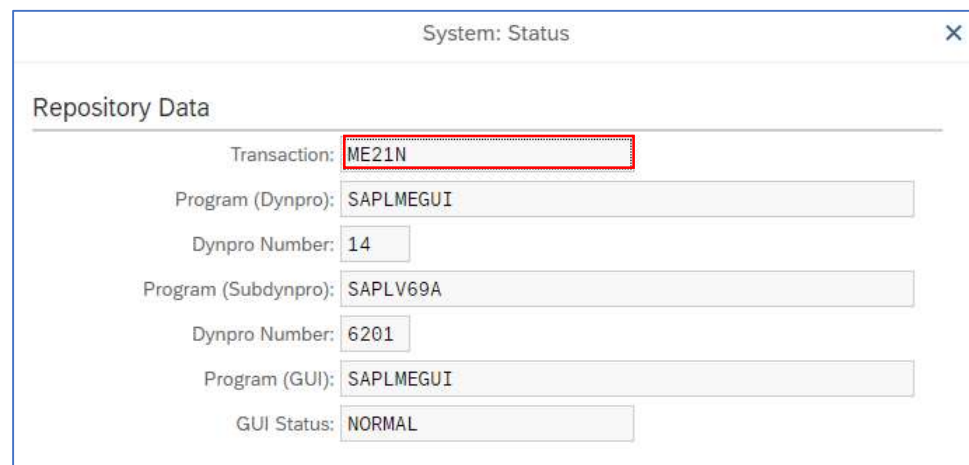
Customizing the Fiori interface

Another feature of SAP is to customize the user interface by adding tiles to exiting groups or creating new groups which include the most frequently used transactions.
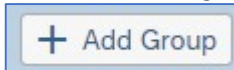As an example, execute the following steps:
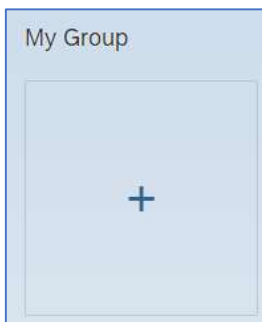
1. Click on the *User Profile* icon _____ .
2. Click on *Edit Home Page.*
3. Click on _____ .
4. Enter a name for the new group.
5. Click on the "+" symbol to add a transaction tile to the new group:

My Group

+

6. In the *App Finder,* click on the _____ of a transaction to add it to the new group.
7. Check that the new group has been added with the chosen transaction tile.