Tutorial Week 2 & 3 – Enterprise Systems – Sydney Campus

- 1. Summary of Lecture 1: Introduction to Enterprise Systems
- 2. Summary of Lecture 2: System Development Life Cycle and Introduction to SAI
- 3. Tutorial Week 2 & 3
- 4. Mastering SAP S/4HANA: A Comprehensive Guide to ERP System Integration and Application
- 5. Mastering SAP S/4HANA: A Comprehensive Guide to ERP System Integration and Application
- 6. Tutorial Week 2 & 3
- 7. Attendance

Lecturer/Tutor: Dr. Farshid Keivanian



Welcome to Weeks 2 and 3 of our tutorial series, where we dive deeper into the world of Enterprise Systems at the Sydney Campus. These sessions build upon the foundational knowledge from our previous lectures on interface design evaluation and enterprise systems. We'll explore expert reviews, usability testing, and various evaluation methods that are crucial for assessing the effectiveness of user interfaces. As we advance through these tutorials, we'll also engage with practical scenarios and hands-on SAP exercises to integrate theory with application, ensuring a comprehensive understanding of systems development and ERP system functionalities. This will prepare you for more complex concepts and applications in the coming weeks.





Overview of Enterprise Systems

Enterprise Systems are large-scale software applications designed to integrate and manage core business processes across an organization. Common types of ES include:

- Enterprise Resource Planning (ERP): Systems that integrate core business processes like finance, HR, manufacturing, supply chain, services, procurement, and others.
- **Customer Relationship Management (CRM):** Systems focused on managing customer information, sales, and marketing.
- Supply Chain Management (SCM): Systems that manage the flow of goods and services from manufacturing to customer delivery.



Objectives of Enterprise Systems

- Integration: Bringing together various business processes to ensure they work cohesively.
- Automation: Reducing the need for manual intervention in business processes.
- Data Analytics: Providing tools to analyze business operations and make informed decisions.

Benefits of Enterprise Systems

- Improved efficiency and productivity by streamlining processes.
- Enhanced visibility into operations, leading to better decision-making.
- Increased scalability and flexibility in business operations.

Challenges of Implementing Enterprise Systems

- High initial costs and ongoing maintenance expenses.
- Complexity of installation and customization.
- Resistance to change from employees.



Practical Example: A Retail Company in Australia Implementing ERP



Scenario:

Imagine a mid-sized retail company based in Sydney, Australia, aiming to manage its growing operations more effectively. The company decides to implement an ERP system to improve its inventory management, sales processing, and customer relationship management.

Steps Involved:



- 1. Requirement Analysis: Understanding the specific needs of the business, including inventory turnover rates and customer interaction data.
- **2. System Selection:** Choosing an ERP system that best fits their needs, possibly SAP or Oracle.
- **3. Customization and Integration:** Tailoring the ERP system to align with the company's processes and integrating it with existing systems.
- 4. Training and Change Management: Training staff to use the new system and managing the transition process.

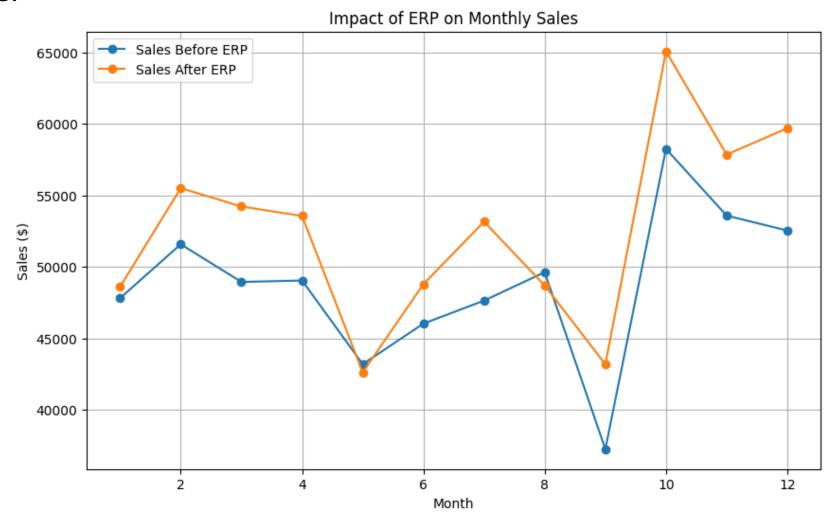
HOLMES

Data Analysis:

To show the impact of the ERP implementation, we could analyze monthly sales data before and after the ERP goes live.

 Let's generate a hypothetical plot showing this:

This plot would ideally show an upward trend in sales post-implementation, illustrating the potential benefits of an ERP system for streamlining operations and boosting sales.



The plot compares monthly sales figures before and after the implementation of an Enterprise Resource Planning (ERP) system. Here's an analysis based on the visual information provided:

1. Sales Trends: There are two distinct lines on the plot representing sales data over a 12-month period. The blue line represents sales before the ERP was implemented, and the orange line represents sales after the ERP implementation.



2. Volatility: The sales data both

before and after the ERP

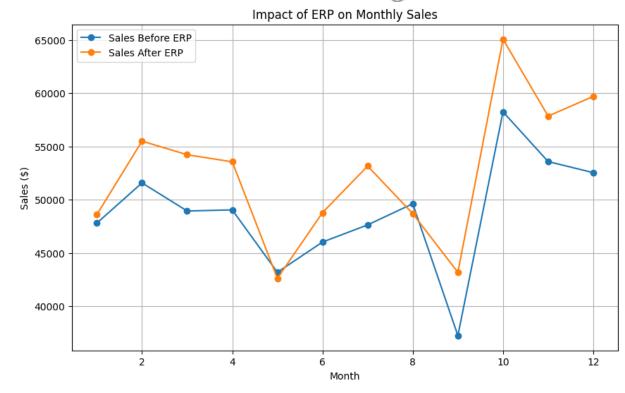
implementation show variability

throughout the year. This is typical for

retail sales, which can fluctuate due

to various factors such as seasonality,

promotions, and market conditions.



3. Post-ERP Increase: The sales after ERP implementation, on average, seem to be higher than the sales before. This suggests that the ERP system may have had a positive impact on sales performance. However, without statistical analysis, we can't confirm if the increase is significant or simply due to natural fluctuations.

4. Seasonal Patterns: It's not clear from the plot if there are any seasonal patterns, as there is only one year of data. Multiple years would be needed to identify

5. Data Spread: The range of sales both before and after ERP implementation shows a wide spread, indicating that there could be high variability in monthly sales figures. This could be due to external factors affecting sales or internal operational issues.

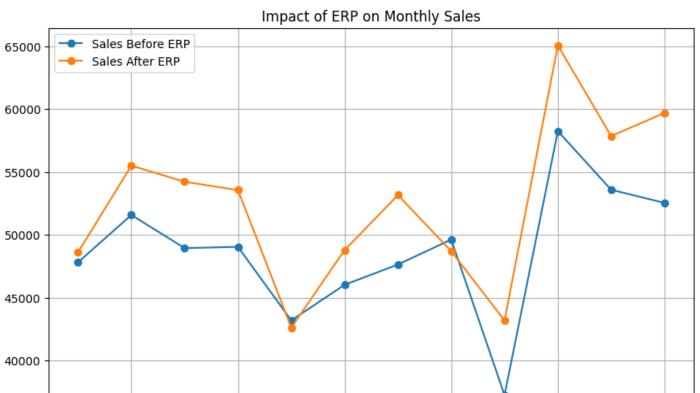
seasonality.



10

12

8



Month



6. Highest and Lowest Sales: There are

noticeable peaks and troughs in the plot.
The highest sales after ERP
implementation occur in the 11th month,
while the lowest sales are seen in the 9th
month. This could be due to seasonal
effects or specific business activities.



7. Data Generation: The data is synthetically generated using a normal distribution for both sets, with an imposed average increase of 10% for the post-ERP implementation data. In real-world scenarios, actual sales data would be needed for a substantive analysis.



To provide a more thorough analysis, we would typically:

- Assess the statistical significance of the difference in sales before and after ERP implementation using hypothesis testing.
- Analyze the data for patterns such as seasonality, trends, and outliers.
- Compare the results against industry benchmarks or internal targets to determine the relative success of the ERP implementation.



Given the random nature of the data generation, the analysis here is hypothetical. Real-world sales data would potentially include many more variables and require a deeper analytical approach to yield meaningful insights.

SAP Fiori is a user experience design for SAP software. It represents a personalized, responsive, and simple user experience across devices and deployment options. Fiori uses web-based technologies like HTML5 and SAPUI5 to create a modern interface for SAP applications. While SAP Fiori itself is not a reporting tool, it provides a way to access SAP reports that have been created in the backend system.

For example, if the sales data is stored in an SAP system, you could use the analytical apps provided by SAP Fiori to visualize the data. These apps can connect to the backend SAP HANA database, where the data is processed, and then display the results in Fiori's user-friendly interface.

However, to create custom visualizations, we would need to:

- Use SAP Analytics Cloud or SAP BusinessObjects for more complex and customizable reporting.
- Develop a custom SAPUI5 application that retrieves data from the SAP backend and uses a charting library to plot it.

SAPUI5 has its own set of controls for data visualization (e.g., VizFrame), which can be used to create charts and graphs.

Here's a simplified outline of the steps for creating a similar chart in an SAP system:

1. Data Preparation: Ensure that the relevant sales data is available in the SAP system and accessible through an OData service or other API.

2. SAPUI5 Application Development:

- Develop a custom SAPUI5 application.
- Utilize SAPUI5 data visualization libraries to create the chart.
- Bind the data source to the chart to display the data.

3. Deployment:

- Deploy the application on the SAP Fiori launchpad.
- Ensure that proper authorizations are set so the end-users can access it.

To actually produce these results using SAP Fiori, you would need access to the SAP system, relevant permissions, and possibly the help of an SAP developer to create or customize an app for these specific reporting needs. The detailed implementation would be quite technical and would go beyond what we could outline in a general summary.

Lecture 2 focuses on understanding the Systems Development Life Cycle (SDLC), the ERP Implementation Life Cycle, and introducing SAP ERP systems. The lecture aims to compare and contrast the SDLC with the ERP Life Cycles (ERPLC), emphasizing the roles of project management office (PMO) and project organization in successful ERP implementations. Key components include:

- **SDLC Overview:** A review of traditional methodologies and approaches of SDLC.
- **ERP Implementation Life Cycle:** Understanding ERP implementation through a systematic approach, highlighting traditional and rapid ERP life cycles.
- Introduction to SAP: Overview of SAP as a company, its history, ERP solutions, and key business suits.
- Case Study Review: Application of theories through the Global Bike company case study, which is a practical application in an ERP environment.

Practical Example: SAP Implementation in an Australian Context

Scenario

Consider an Australian manufacturing company, "Aussie Cycles," which specializes in producing high-end bicycles. The company is transitioning from legacy systems to SAP ERP to streamline operations, enhance production efficiency, and improve inventory management.

Implementation Steps

- 1. Project Preparation: Define project goals, scope, and establish a project team. Secure executive buy-in from Aussie Cycles' senior management.
- **2. Business Blueprint:** Develop a detailed plan of the company's business processes to configure SAP ERP, focusing on critical areas such as Procurement, Sales, Inventory, and Financials.

- **3. Realization:** Configure the SAP system according to the blueprint, perform necessary customization, and prepare for testing.
- **4. Final Preparation:** Conduct user training, system testing, and data migration. Prepare for golive by ensuring all business and system requirements are met.
- **5. Go-Live and Support:** Switch operations from the legacy system to the SAP ERP system. Provide ongoing support and resolve any post-implementation issues.

Example: Inventory Management Enhancement

Current Problem:

Aussie Cycles has issues with stock outs and excess inventory due to poor inventory management and forecasting.

SAP Solution:

Implement SAP's Material Management module to automate inventory tracking, improve material requirement planning, and optimize stock levels based on real-time data.

Expected Outcome:

Enhanced production planning, reduced storage costs, and improved customer satisfaction through better product availability.

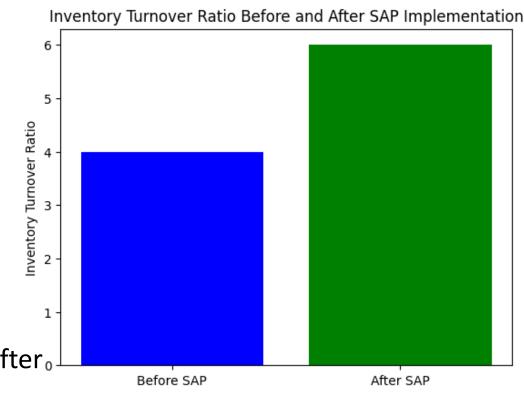
Visualization: Impact of SAP Implementation on Inventory Efficiency

Let's create a simple plot to visualize the expected improvement in inventory turnover ratio before and after SAP implementation. This ratio measures how often a company replaces its inventory in a given period and is a critical metric for assessing the efficiency of inventory management.

The bar chart illustrates the hypothetical impact of SAP implementation on the inventory turnover ratio of a business, where the inventory turnover ratio represents the number of times a company's inventory is sold and replaced over a period.

Before the implementation of SAP, the turnover ratio was 4, indicating that the inventory was turned over 4 times a year. Afteroimplementing SAP, the ratio increased to 6, suggesting a more efficient use of inventory, with stock being replenished 6 times a year.

This 50% increase in the turnover ratio implies that the company is able to sell and restock its inventory more frequently, which can be indicative of better inventory management and potentially improved sales processes, assuming constant or improved sales levels.



4. Mastering SAP S/4HANA: A Comprehensive Guide to ERP System Integration and Application

For us to effectively understand about SAP S/4HANA and its application within enterprise systems, a structured approach to the content can be extremely beneficial. Here's a comprehensive breakdown of key concepts, integrated with practical examples and relevant visual aids when necessary.

Core Concepts for Understanding SAP S/4HANA

1. Introduction to ERP Systems

- What is an ERP System?
- Purpose and Benefits of ERP Systems
- Overview of SAP S/4HANA as an advanced ERP system.

2. Components of SAP S/4HANA

Core Modules: Financials, Controlling, Sales, Accounting, Procurement, Fulfillment, Human Resources.

Week 4 & 5, Week 6 & 7, Week 8 & 9

SAP Fiori: Introduction to the user interface used in S/4HANA for enhanced user experience.

3. Navigating SAP S/4HANA

- Login and User Interface: How to access and navigate the system.
- Use of Fiori Launchpad: Understanding its layout and customization options.

4. Data Management

- Master Data vs. Transactional Data: Definitions and roles within SAP systems.
- Material Master: Importance in inventory and supply chain management.

5. Business Process Integration

- How SAP integrates and automates various business processes across departments.
- Example workflows like Order to Cash or Procure to Pay.

6. Reporting and Analytics

- Overview of reporting tools available in SAP S/4HANA.
- How to generate and customize reports.

5. Mastering SAP S/4HANA: A Comprehensive Guide to ERP System Integration and Application

Practical Example in Australia

To provide a practical example, consider an Australian manufacturing company using SAP S/4HANA to integrate and streamline their operations:

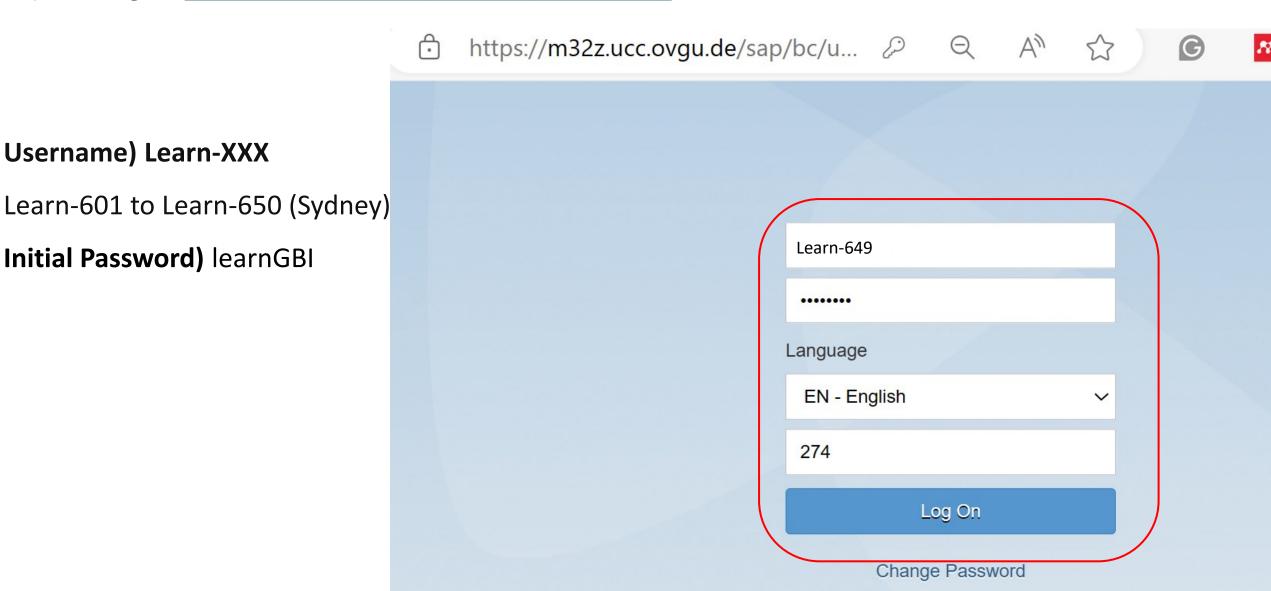
- Company Profile: A Melbourne-based company producing and distributing electronics.
- **Business Need:** Integration of processes across multiple departments from manufacturing to sales.
- **SAP Implementation:** Utilization of SAP modules to manage production schedules, inventory, procurement, sales orders, and customer relationships.

6. Tutorial Week 2 & 3

Username) Learn-XXX

Initial Password) learnGBI

A) SAP Log in: https://m32z.ucc.ovgu.de/sap/bc/ui2/flp





HS2041 – Enterprise Systems

Introduction to SAP ERP S/4HANA



Overview

- SAP is a German Company (formed in 1972), that is currently one of the world's leading producers of software for the management of business processes (Enterprise Resource Planning Systems etc)
- SAP stands for System Applications and Products in data processing.
- S/4HANA refers to the 4th Generation of SAP Business Suite based on the in-memory database (High performance ANalytic Appliance) that allows companies to perform transactions and analyse business data in real time.
- Fiori is a design language and user experience approach that supports
 the creation of business apps with a consumer-grade user experience,
 turning casual users into SAP experts with simple screens that run on any
 device.

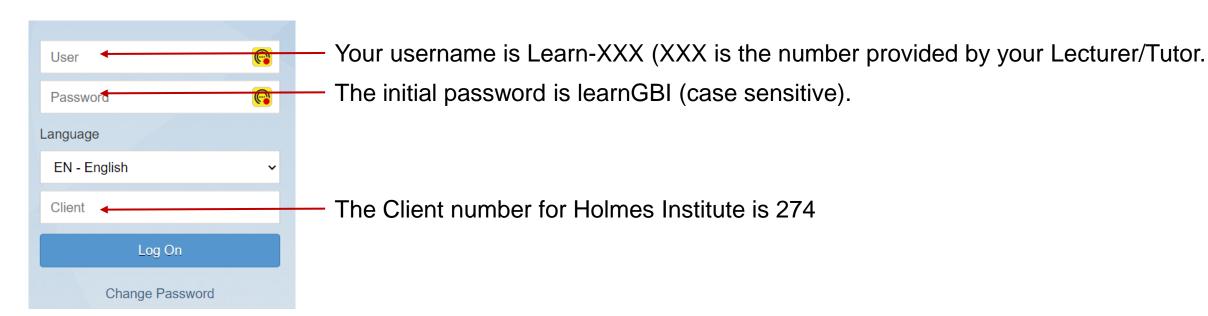


Logging in to S/4HANA



Logging in to the SAP S/4HANA System

- To access the SAP system, use the Web-GUI link below:
 - https://m32z.ucc.ovgu.de/sap/bc/ui2/flp
- The SAP Login Screen appears, follow the advice to sign in:



 The password needs to be changed after the initial sign-in and will be used for all future log-ins.

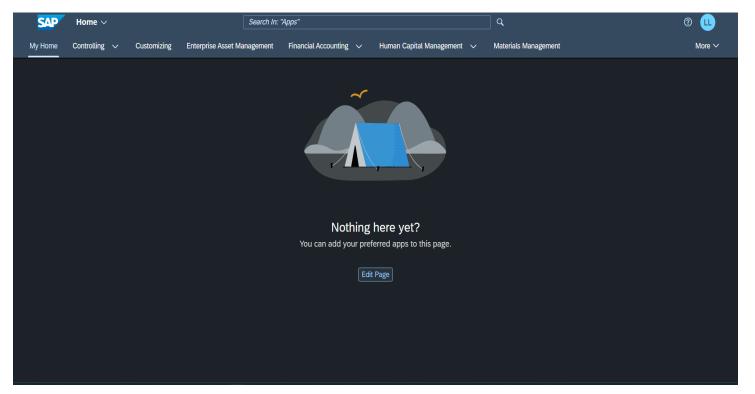


Understanding the GUI Interface for S/4HANA



SAP S/4HANA Fiori Launch Pad

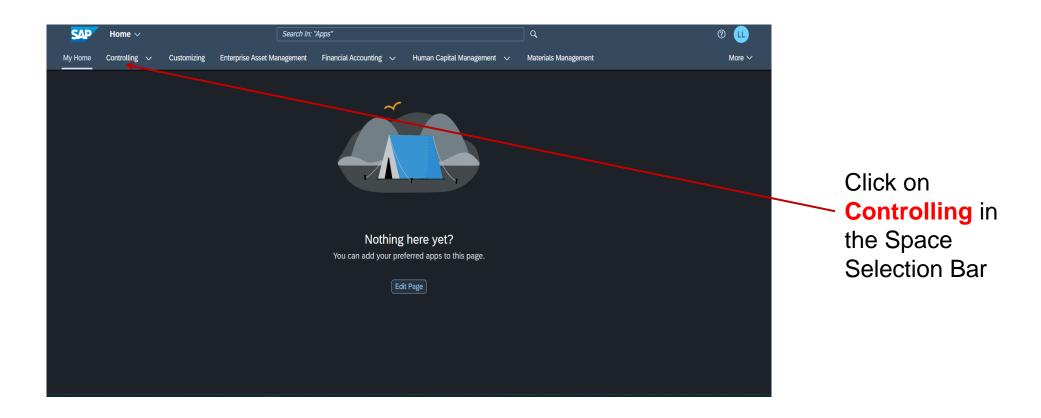
 The first screen that appears is the SAP Fiori launch home pad and is the main entry point for the SAP Fiori apps on mobile and desktop devices.





Exploring the Controlling Space

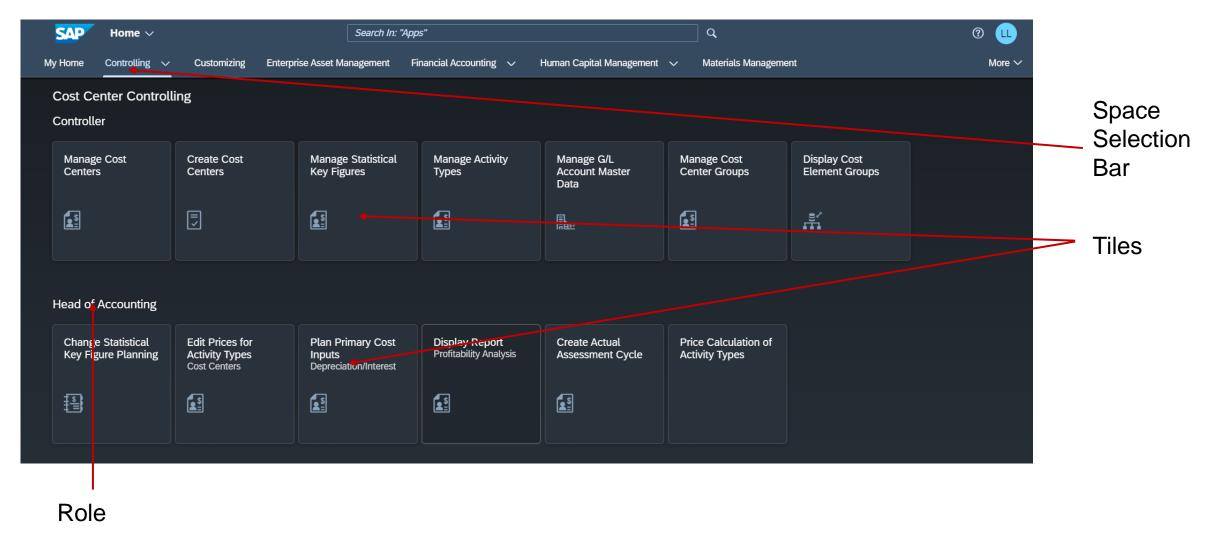
 For the Introduction workshop (Week 2 & 3), we will be using the Controlling space from the Selection bar.





Understanding the Fiori GUI

The Fiori GUI includes several elements as referred below:





Global Bikes Inc. (Case Study Scenario)



Case Study Scenario

- Global Bikes Inc (GBI) is a fictitious company whose data is provided in the SAP System for analytical purposes.
- The company (GBI) was founded in 2001 following the merger of two bicycle manufacturers, one based in the US and the other in Germany.
- GBI has three lines of business:
 - deluxe and professional touring bikes,
 - > men's and women's off-road bikes,
 - > and bike accessories.
- GBI sells its bikes to a network of specialised dealers throughout the world, and it procures its raw materials from a variety of suppliers globally.



Case Study Scenario (Contd)

- GBI has two manufacturing facilities in the US and one in Germany.
- It also has three additional warehouses, two in the US and one in Germany.
- GBI has more than 100 employees globally.
- The organisation uses SAP ERP to support its processes.
- The company has a new bicycle for sale- Mongoose Mountain Bike.
 The SAP systems contain all the necessary data to support GBI's business processes.

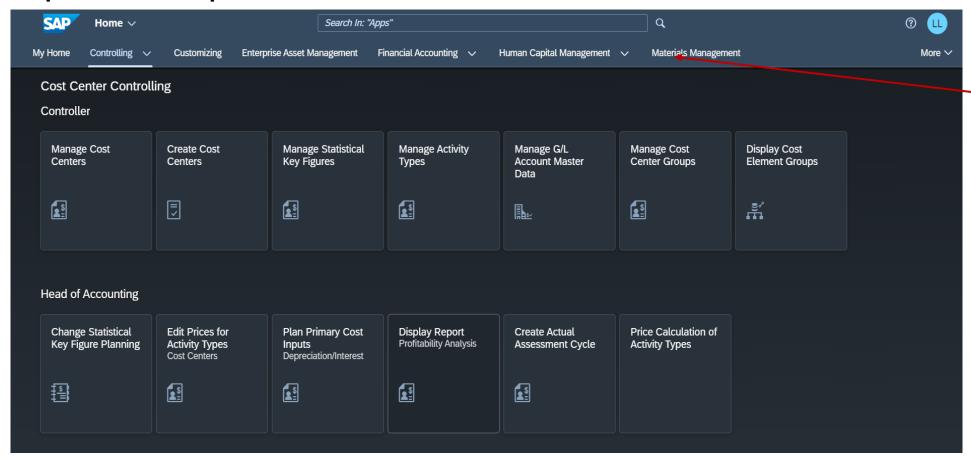


Understanding Data Navigation in SAP S/4HANA



Master Data Navigation

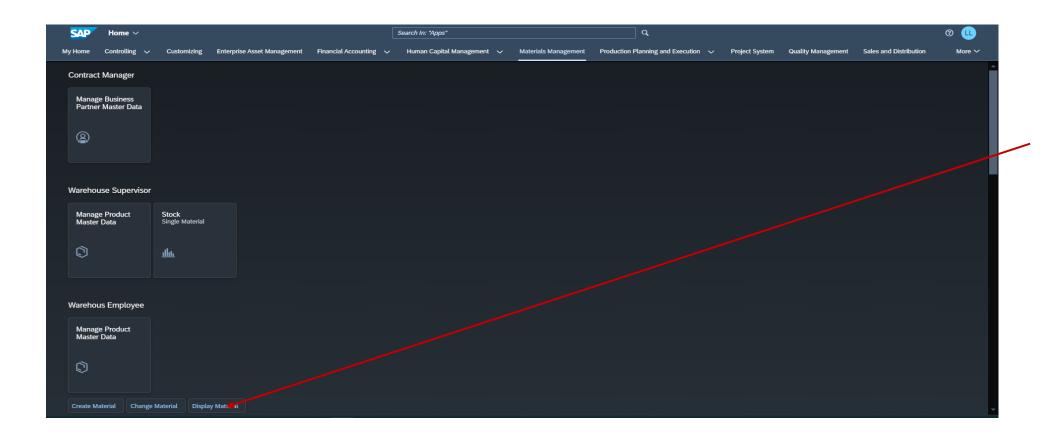
 This exercise is focused on navigating the Master Data for a particular product.



Click on
Materials
Management
Space to view
the apps and
roles



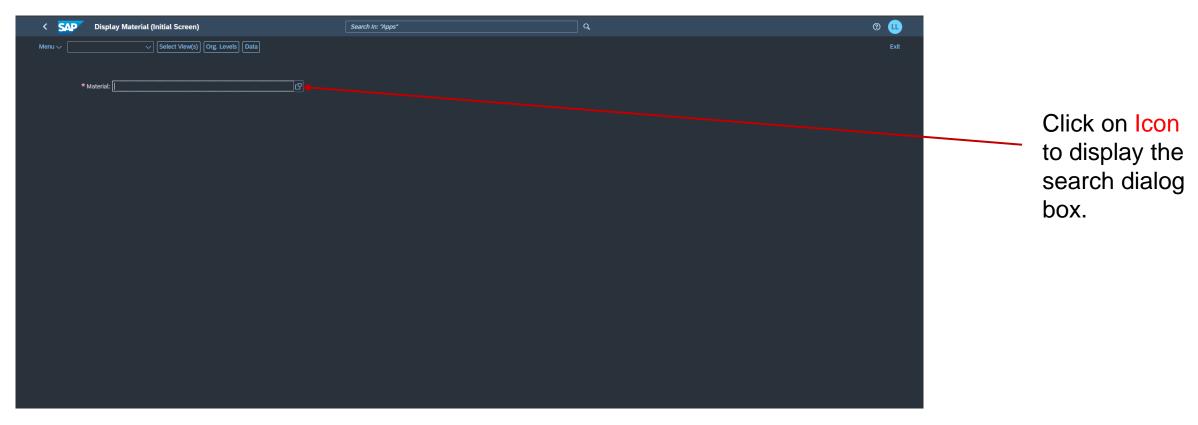
 The task is to view the particulars of a specific product "Deluxe Touring Bike". The roles in the space indicate that the "Warehouse Employee" role is suitable to "Display Materials"



Click on
Display
Material
In the role of
Warehouse
Employee to
start the
transaction.

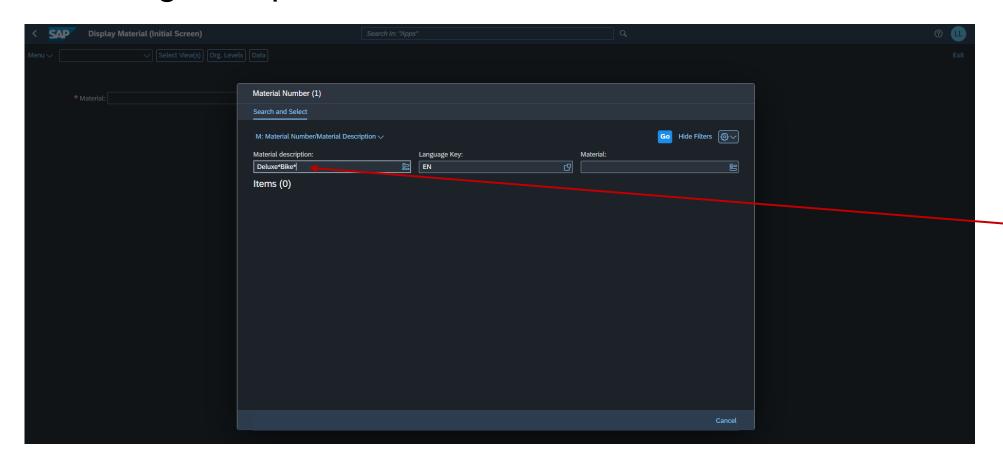


- Searching for a particular item can be initiated by using wildcards as illustrated in the <u>tutorial handout</u>.
- To commence the search, the search dialog box must be displayed.





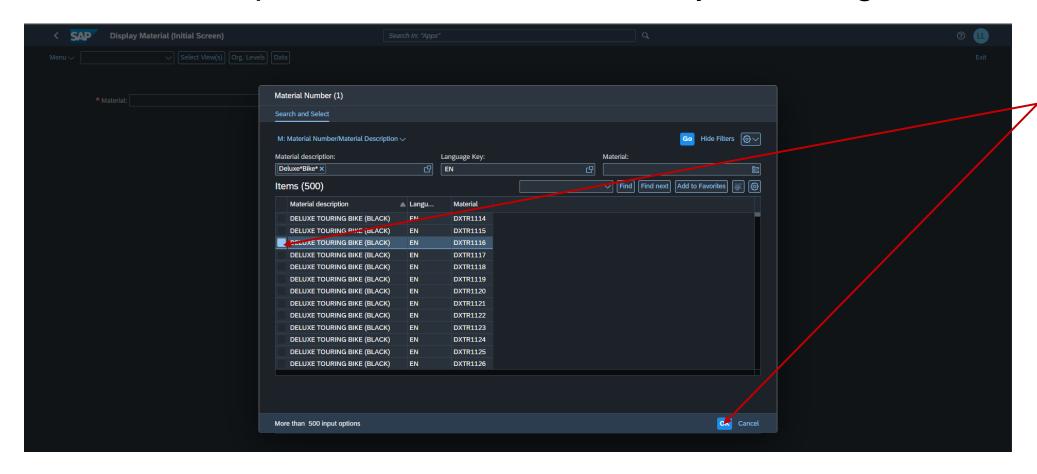
 We will use the materials description to search for the Deluxe Touring Bike particulars.



Type
Deluxe*Bike*
in the Material
Description
and press the
Enter key



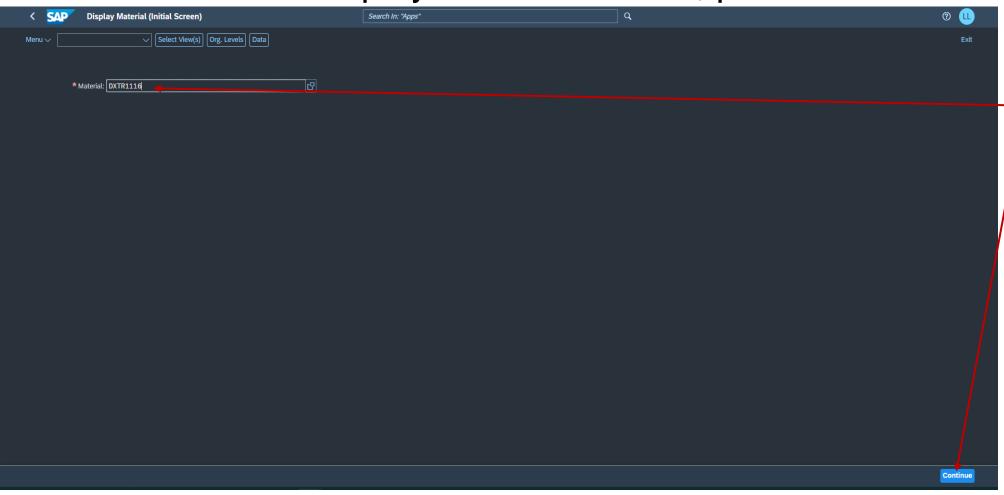
To view the product details, click on any matching item from the list.



Select any matching item from the list and press ok



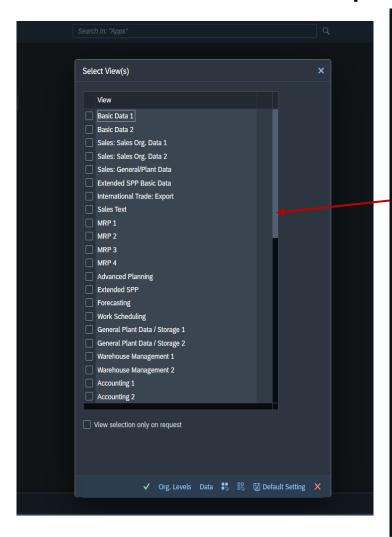
The selection is displayed as Item code, press continue.

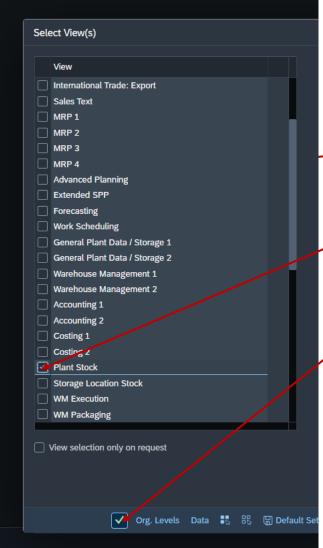


Product Item code is displayed, press continue.



The next screen requires the selection of the data source.

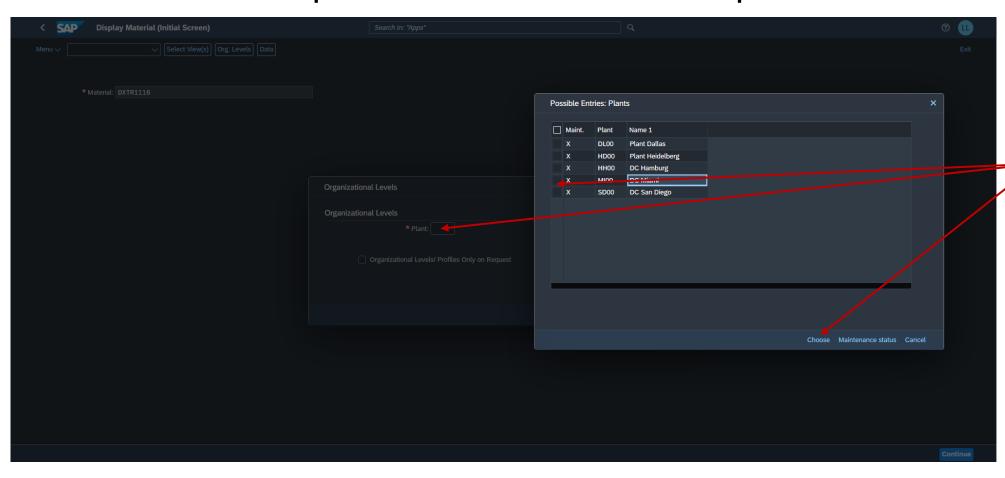




Use the scroll bar to view more options, and select Plant Stock and click on ✓



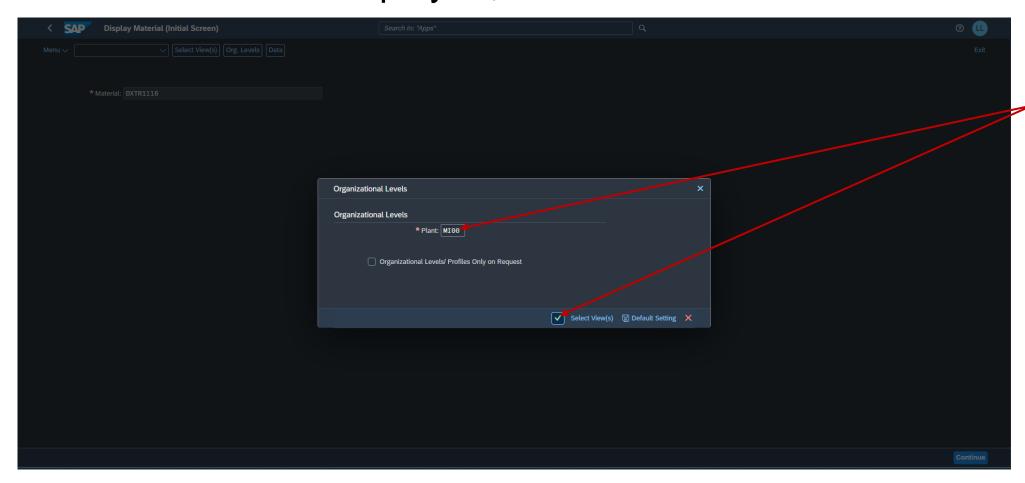
Next screen requires the selection of the plant location.



Use the Plant selection to view the options and then select DC Miami from the options and click choose.



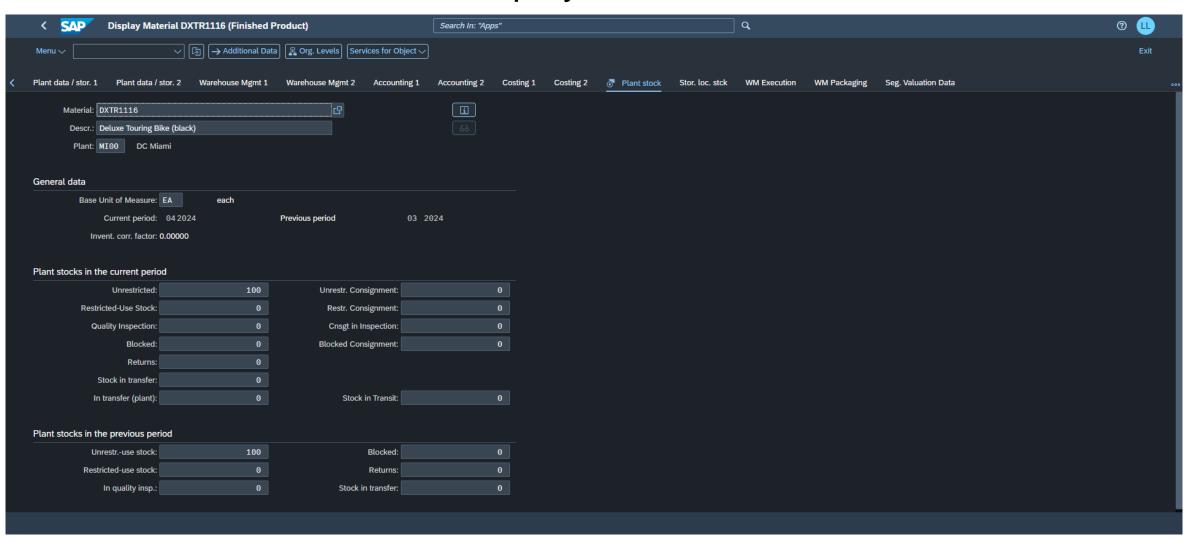
Location code is displayed, select to view the materials detail.



Location code is displayed. Click ✓ to proceed.

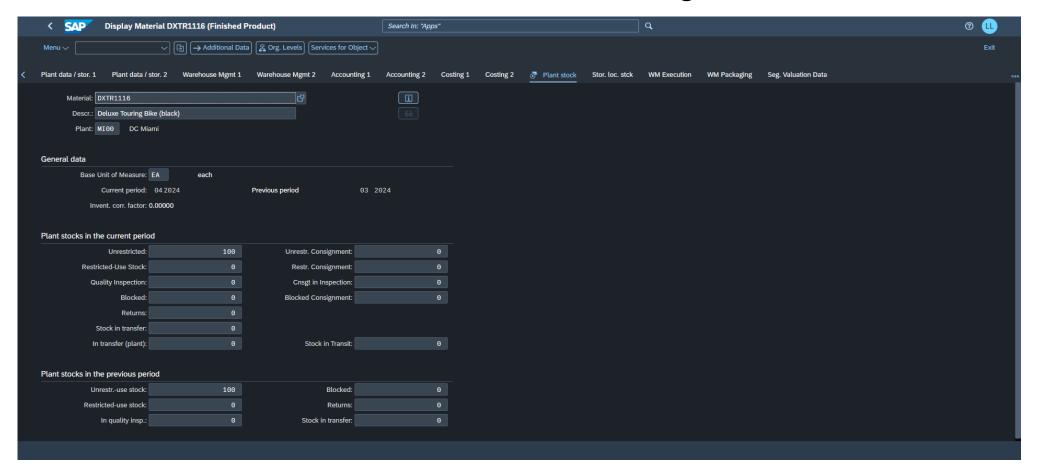


Plant stock information is displayed.





We are interested to find the Price & Weight of the Deluxe Touring Bike

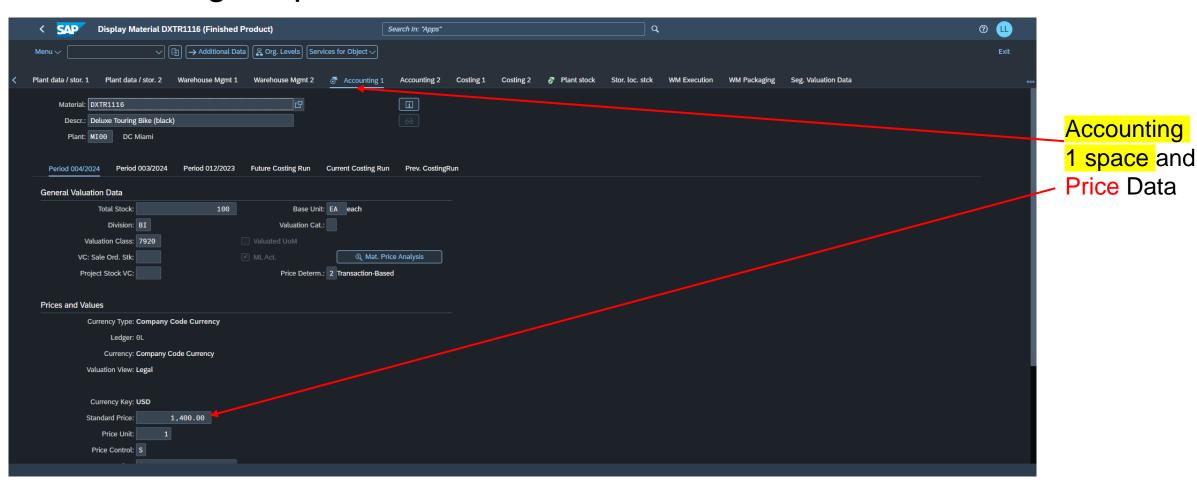


Hints:
The Price is stored in the Accounting 1 space.

The Weight is stored in the Basic Data 1 space.

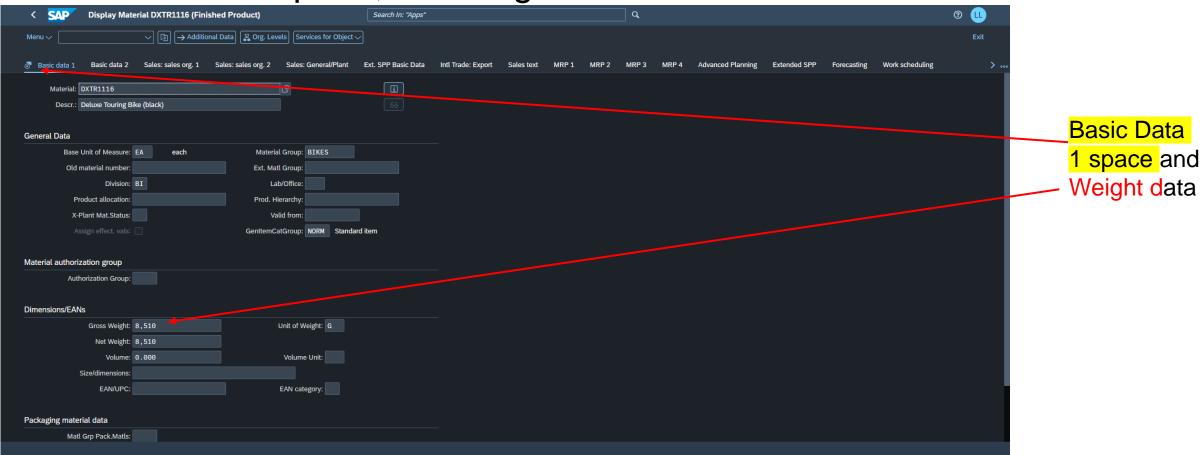


Accounting 1 Space, for Price data





Basic Data 1 Space, for Weight data

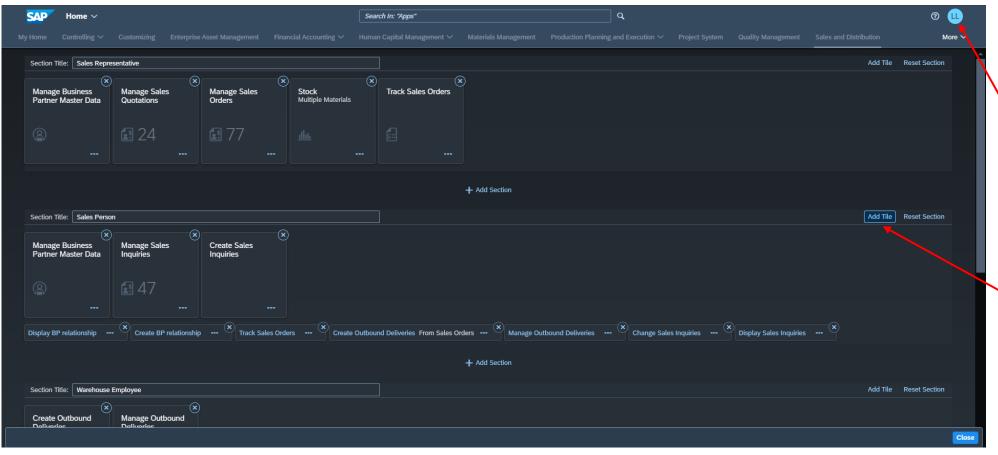




Understanding Reports in SAP S/4HANA



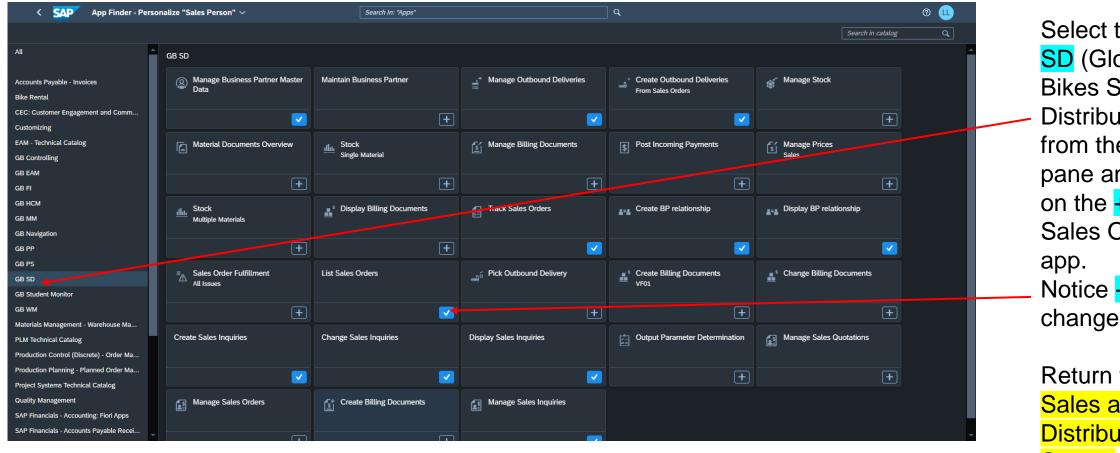
 The List Sales Order app is not included by default. Add it to the Salesperson Role in the Sales & Distribution Space.



To add the List Sales Order app Click LL the profile and select Edit Current Page. In the Sales Person role, click on add Tile.



 Add the List Sales Order App to the SAP Sales and Distribution Space.

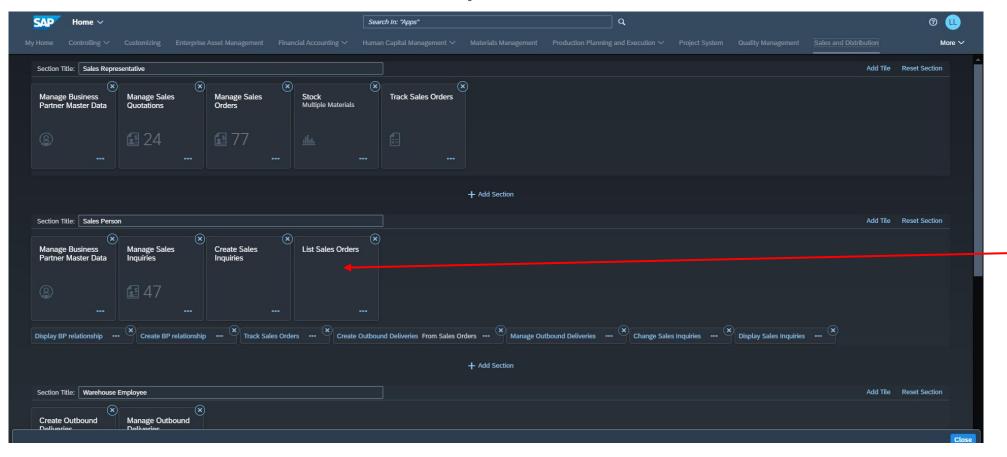


Select the GB
SD (Global
Bikes Sales &
Distribution)
from the left
pane and click
on the + for List
Sales Order
app.
Notice +
changes to ✓.

Return to the Sales and Distribution Space.



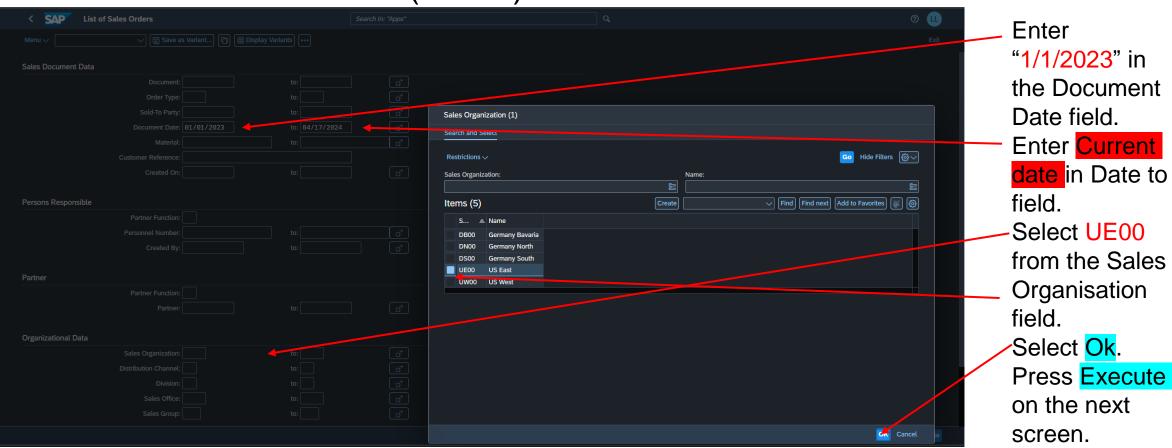
 The List Sales Order app is now included in the Salesperson Role in the Sales & Distribution Space.



The List Sales Order App is added in the Sales Person Role

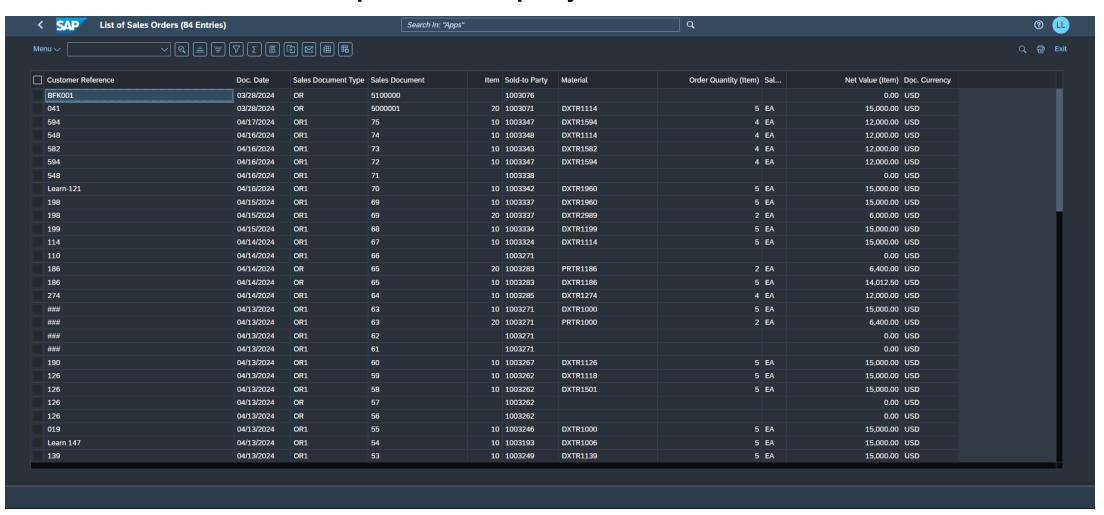


 We need to run a report for all sales from "1/1/2023" till today for the Eastern United States (UE00).



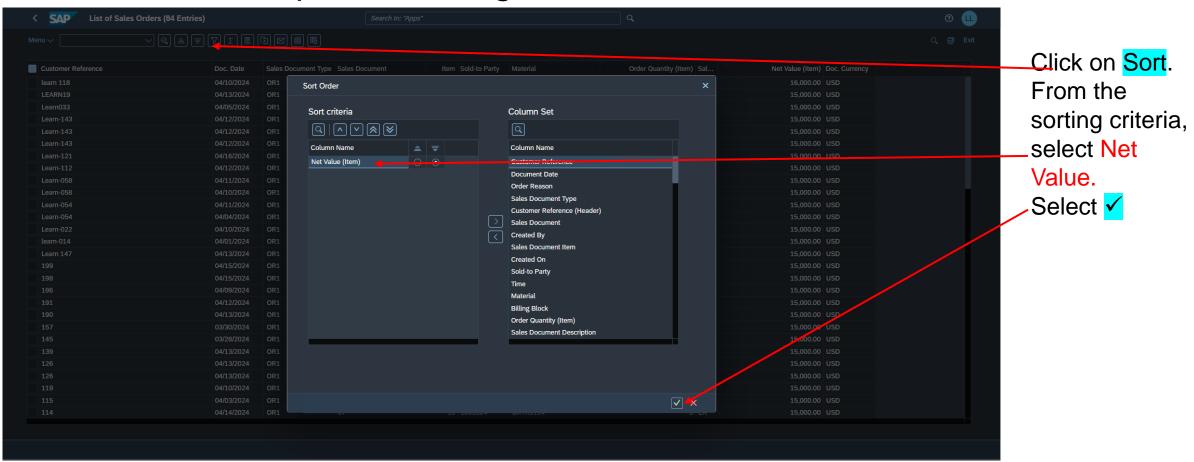


The Sales Order report is displayed.



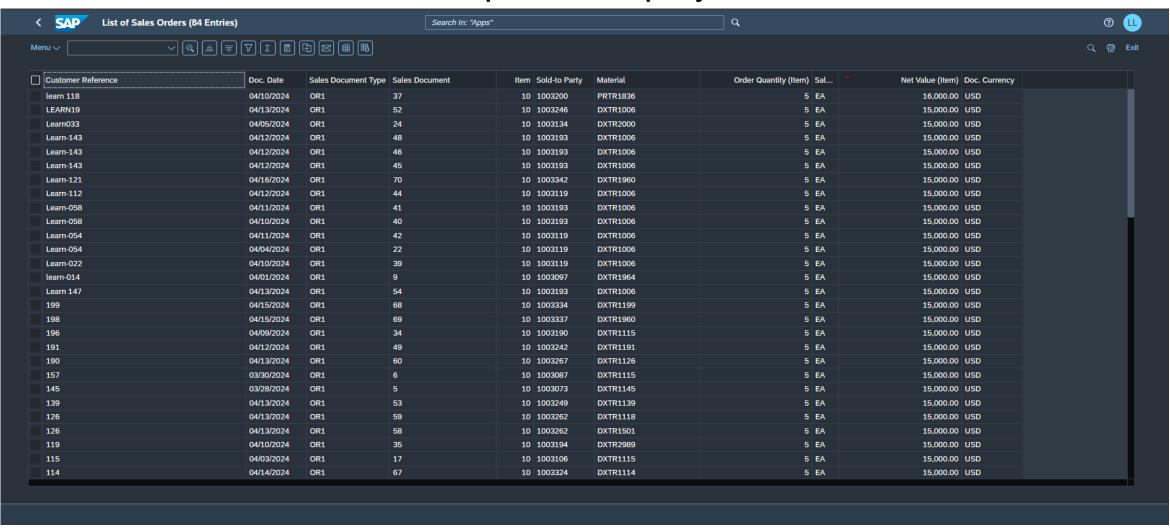


To make the report meaningful, we can sort on Net Value of the Order.



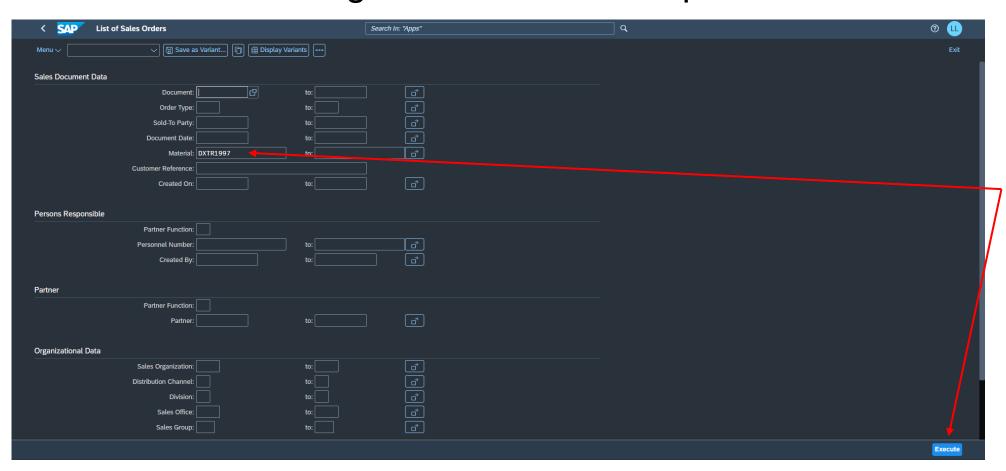


The Sorted Sales Order report is displayed.





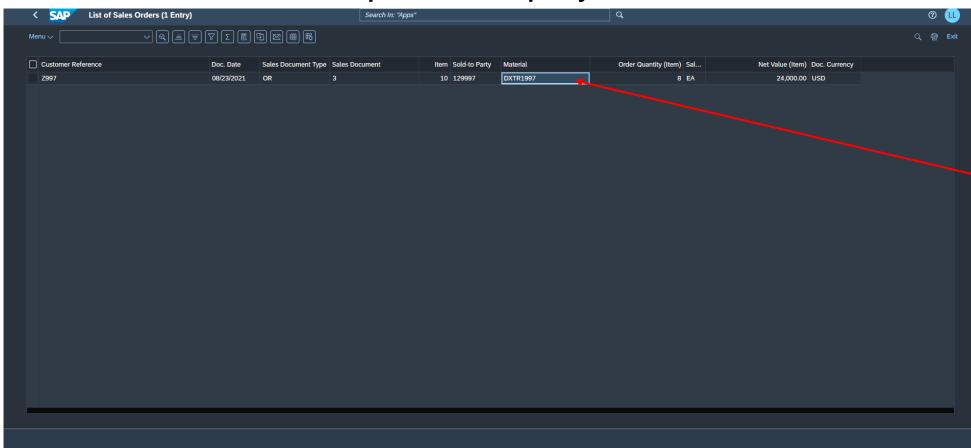
- Drilling Down Data Analysis
- Determine the weight of materials in a particular order.



Click on the
List Sales
Order to initiate
a new report.
Type
DCTR1997 in
the Material
field.
Press Execute.



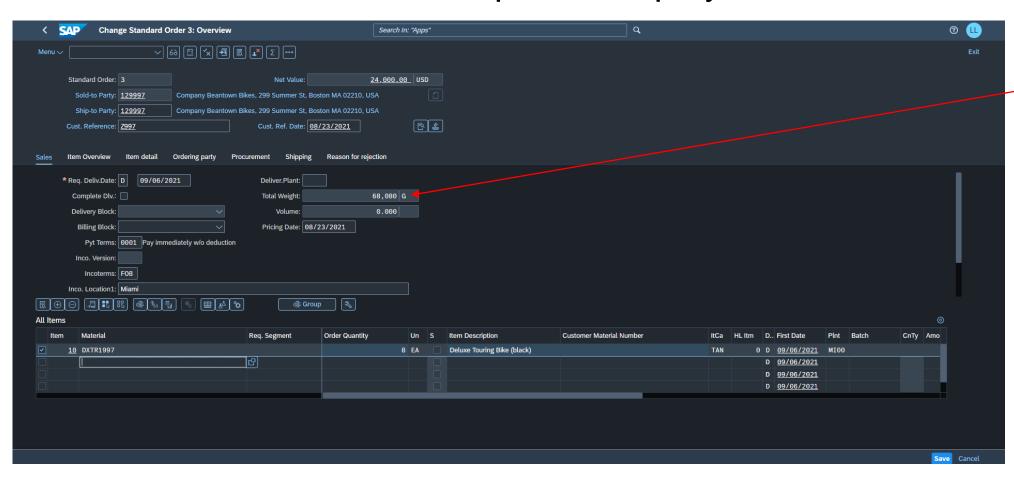
The Sales Order report is displayed.



To Drill Down for more details, double click on DXTR1997 in the materials field.



The Sales Order details report is displayed.



The Net Weight of the Order Items is Displayed.

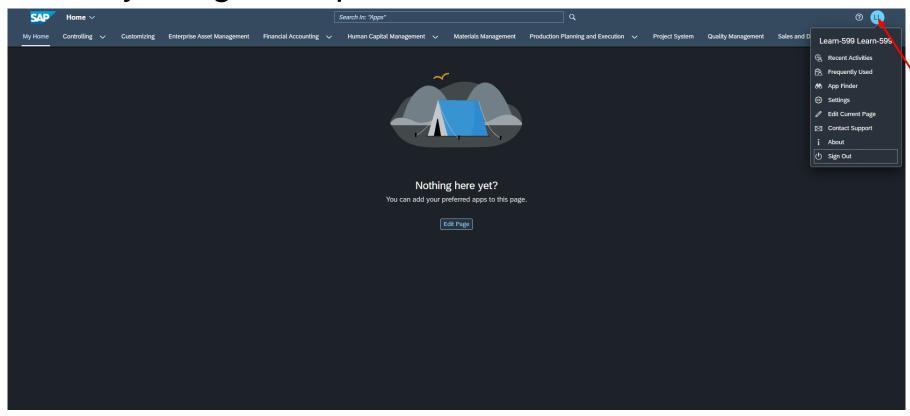


Logging Off



Logging Off

Always Log off to protect the data and to avoid unauthorised use.



To Log Off, Click on LL Profile and select Sign Out, and press OK.



End of Workshop 1 Week 2 & 3