

Off-the-job apply activities - reliable data architectures

Review the following PDF guidance documents (available in the Hub)



USE CASE DIAGRAM GUIDANCE.pdf



UML USE CASE DIAGRAMS.pdf

Task 1: Creating Database Diagrams with Lucidchart

- **Step 1:** Choose a real-world scenario or case study that involves a complex data ecosystem, such as an e-commerce platform or a healthcare analytics system, or select from any of the following:

Scenario 1: NHS Patient Data Management System

The National Health Service (NHS) requires a centralised system to manage patient data across multiple healthcare facilities, including hospitals, clinics, and general practitioners. The system should facilitate the secure storage, retrieval, and sharing of patient information, such as medical history, test results, and treatment plans. It should also enable the integration of data from various sources, including electronic health records (EHRs), medical devices, and wearables.

Scenario 2: Financial Institution's Customer Data Platform

A large financial institution aims to develop a comprehensive customer data platform to enhance its services and personalise customer experiences. The platform should integrate data from multiple sources, including core banking systems, credit card transactions, investment portfolios, and customer interactions across various channels (e.g., online banking, mobile apps, and branch visits). The system should enable the bank to gain a 360-degree view of each customer, support targeted marketing campaigns, and facilitate risk assessment and fraud detection.

Scenario 3: E-commerce Platform's Order Management System

A growing e-commerce company needs a scalable and efficient order management system to handle the increasing volume of online transactions. The system should manage the entire order lifecycle, from placement to fulfilment and delivery. It should integrate with various subsystems, such as product catalogues, inventory management, payment gateways, and shipping providers. The system should also support real-time order tracking, customer notifications, and analytics to optimise the supply chain and improve customer satisfaction.

Apply your skills!

- **Step 1:** Identify the main entities, relationships, and data flows within the selected scenario
- **Step 2:** Sign up for a Lucidchart account (if you don't have one already) and familiarise yourself with the platform's interface and features

Link to LucidChart:

<https://www.lucidchart.com/pages/use-cases/creating-technical-diagrams>

Step 3: Create a new document in Lucidchart and select the template for Use Case Diagram as seen in the picture below:

Templates

Documents created from templates will be placed in:

[My documents](#)

Search all templates...



All templates



Popular



Agile

NEW



Flowcharts



Technical systems



Brainstorming



Organizing teams



Meetings and workshops



Team alignment



Customer research



Project planning



Wireframing



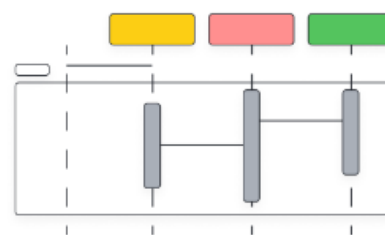
Community



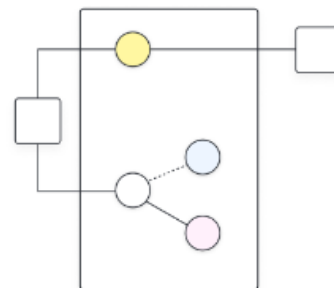
Education

Created by me

Popular



Use case diagram



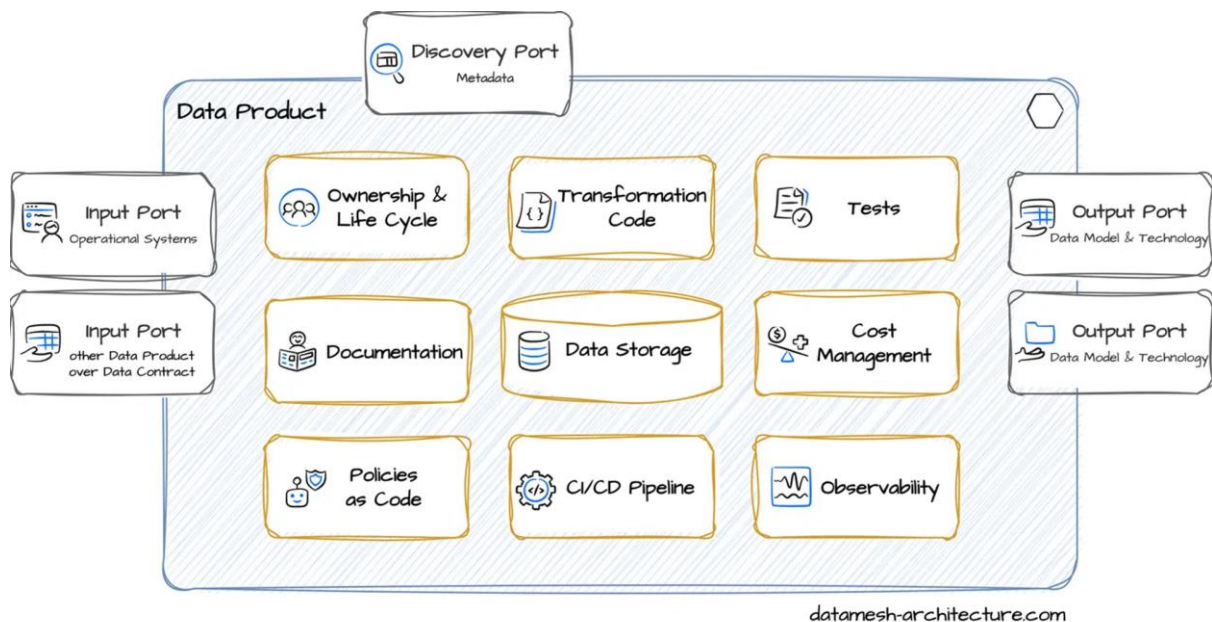
Open



- **Step 4:** Begin adding actors to your diagram, representing each entity as a persona and labelling them appropriately.
- **Step 5:** Define the use cases and the relationships between use cases using connector lines
- **Step 6:** Add any relevant information as needed. You can open the shape library manager by pressing the M key and then search for “UML”

- **Step 7:** Include multiple containers for complex use cases.
- **Step 8:** Annotate the diagram with comments or notes to explain key elements, data considerations, and their impact.
- **Step 9:** Share your completed diagram with peers or mentors and gather feedback on its clarity, completeness, and adherence to best practices.
- **Step 10:** Download a local version of your diagram (an image) and update your learning journal with this new deliverable.

Task 2: Designing a Data Product



- **Step 1:** Identify a specific business problem or opportunity within your organisation that could be addressed by a data product. This could be related to improving decision-making, optimising processes, or enhancing customer experiences.
- **Step 2:** Conduct stakeholder interviews to gather requirements and understand the desired outcomes of the data product. Identify the key users, their needs, and the insights they expect to gain from the product.
- **Step 3:** Based on the requirements, design a rudimentary data product that leverages the organization's data assets to provide actionable insights or enable data-driven decision-making. Consider the data sources, processing requirements, and visualization techniques.
- **Step 4:** Create wireframes or mockups of the data product's user interface and key functionalities using tools like Balsamiq, Sketch, or Figma. Focus on usability, clarity, and the effective presentation of insights.
- **Step 5:** Develop a proposal document that outlines the value proposition, target users, and expected benefits of the data product. Explain how the product aligns with organizational goals and drives business value.
- **Step 6:** Present your data product concept to relevant stakeholders, using the wireframes and proposal document to communicate your vision. Be prepared to answer questions and gather feedback for further refinement.

Task 3: Applying TOGAF Principles to Data Governance

- **Step 1:** Research the key principles and components of the TOGAF framework, focusing on its relevance to data governance. Understand the Architecture Development Method (ADM) and its phases.

Link to the OpenGroup website: [TOGAF | www.opengroup.org](https://www.opengroup.org)

- **Step 2:** Select a data domain or system within your organisation that could benefit from improved governance practices. This could be related to master data management, data quality, or data security.
- **Step 3:** Review the existing data governance practices and identify areas for improvement based on TOGAF principles. Consider aspects such as data ownership, data quality standards, and compliance requirements.
- **Step 4:** Develop a high-level data governance plan based on TOGAF principles. Define the governance structure, roles and responsibilities, decision-making processes, and policies for managing data assets effectively.
- **Step 5:** Create a visual representation of the proposed governance framework using tools like Microsoft Visio or Lucidchart. Use flowcharts, mind maps, or other diagrams to illustrate the key components and their relationships.
- **Step 6:** Be prepared to defend your visual representation design choices as required.