

SIT103/SIT772: Database Fundamentals



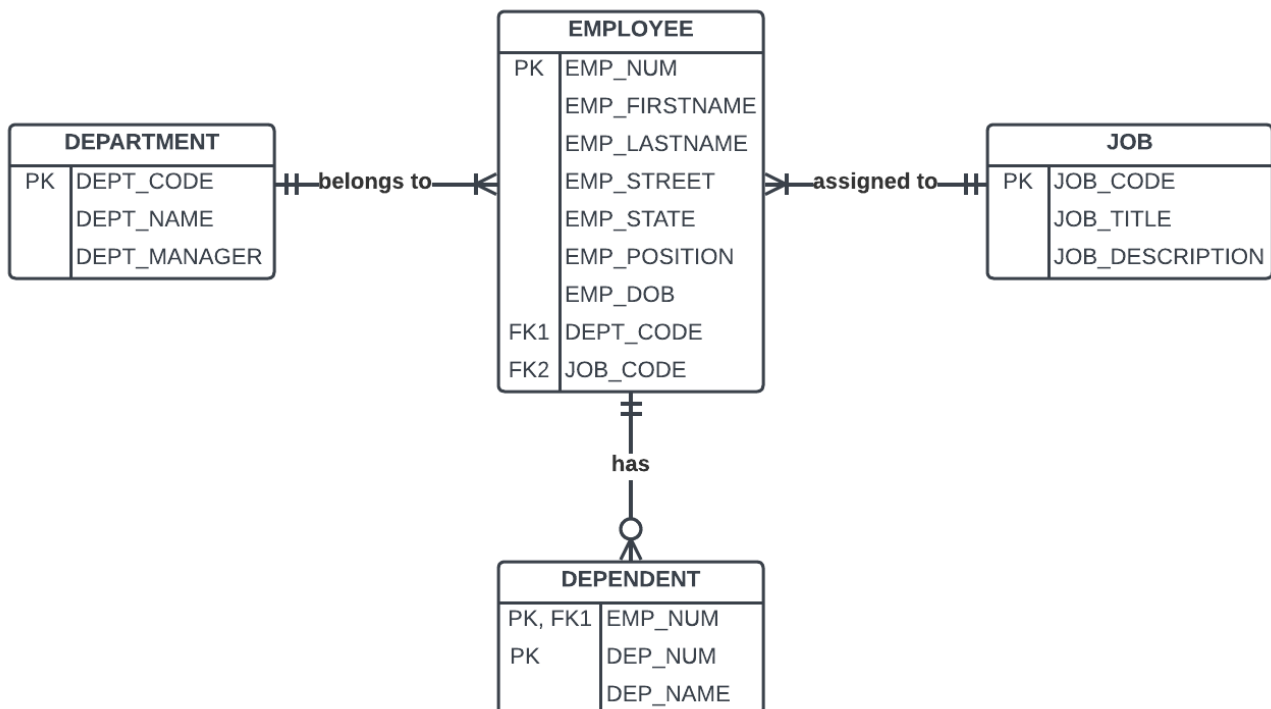
2.1P: Database Modelling Tools

Overview

- In this task, you will learn fundamental concepts of relational database modelling and tools we can use for modelling. You will learn how to use modelling tools like Lucid Chart and Microsoft Visio for database design.

Tasks to do

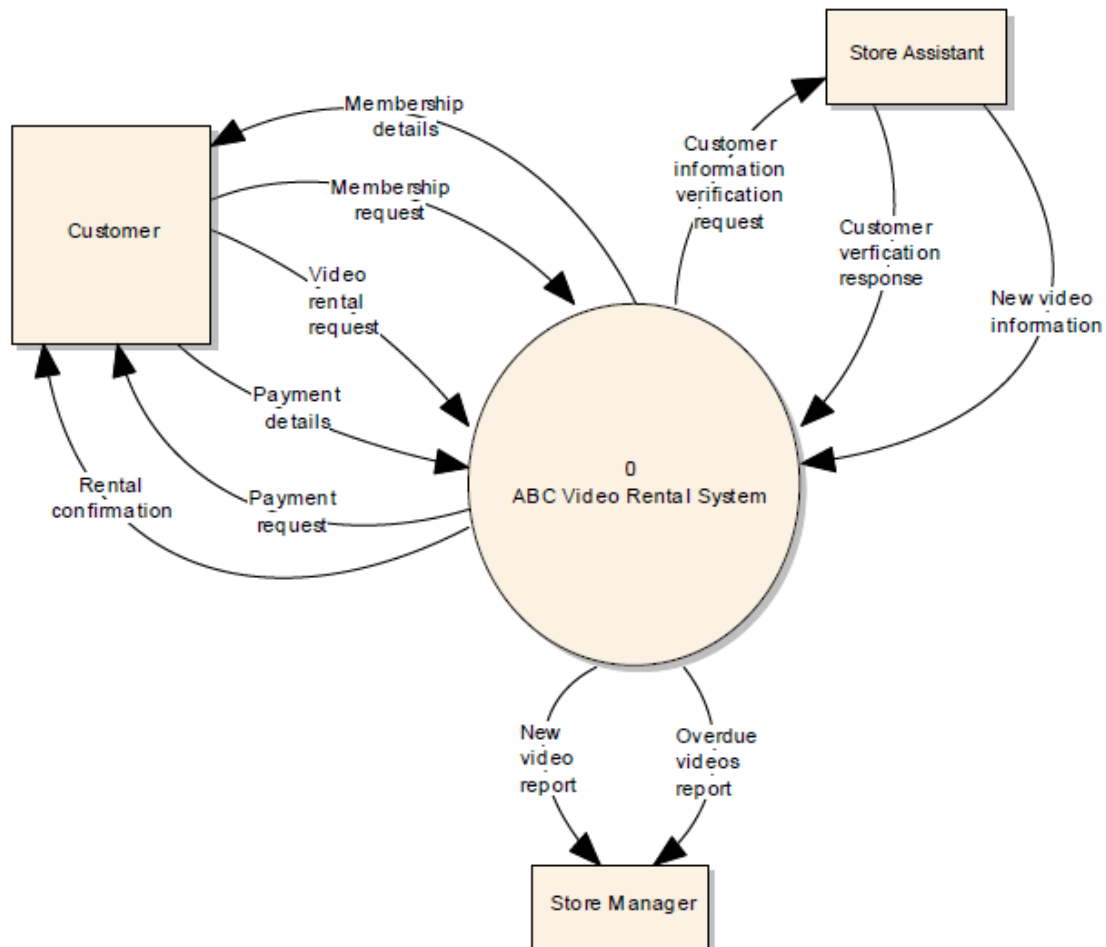
- Sign up for a Lucid Chart at <http://lucidchart.com/>. For some basic instructions on how to use Lucid Chart to draw Entity Relationship Diagram (ERD), please see tutorial document provided in task resources.
- We recommend using Lucid Chart, but you can use other tools like Microsoft Visio if you want. You can download Visio via <https://ada.deakin.edu.au>. Follow instructions in the MS Visio tutorial documents provided in task resources to learn using Visio to draw ERD.
- Using Lucid Chart or Visio, draw the following ERD.



4. Answer the following questions based on the ERD you have drawn.

- How many Entities are there and what are they?
- For the EMPLOYEE Entity: (i) List all attributes; (ii) What is the Primary Key and how do you know that? and (iii) Are there any Foreign Key(s)? If yes, what are they and what are they referring to?
- Explain the relationship between EMPLOYEE and DEPENDENT. Your explanation should include how is EMPLOYEE related to DEPENDENT and vice-versa in terms of whether the relationship is Optional/Mandatory and their cardinalities. Also, discuss how is the relationship maintained in the ERD [*Hint: Primary and Foreign Keys*].
- What is the Primary Key of DEPENDENT? What type of key is it?

5. As discussed in the class, System Context-level Data Flow Diagram (commonly known as **Context Diagram**) is one simple way of understanding system's data requirements. It gives a high-level overview of system inputs and outputs that provide an indication of what data need to be stored in the system. Below is an example Context Diagram for a Video Rental System. Using Lucid Chart or Visio, draw the context diagram. You can check "**Prac02-ContextDiagram-Visio-Lucidchart.pdf**" included in the task resources for some help on how to draw context diagram in Visio and Lucid Chart.



Submission Requirements:

Submit one PDF/WORD file with your answers to Tasks 3-5. Please include screenshots of your diagrams in the file. Submit the file via OnTrack for Task 2.1P.

Submission Due

The due for each task has been stated via its OnTrack task information dashboard.