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Batch : 8-C

Answer

1. What is the ER diagram and its purpose?
    - ❖ ER diagram (Entity Relationship Diagram) is a type of flowchart that illustrates how “entities” such as people, objects or concepts relate to each other within a system.
    - ❖ It mostly used to design or debug relational databases in the fields of software engineering, business information systems, education and research.
2. In which phase it is used in software engineering?
    - ❖ ER diagrams are used in software engineering during the planning stages of the software project.
3. Define the different components used in the ER diagram (Entity, Relationship, Cardinality etc).
    - ❖ Entity is a definable thing—such as a person, object, concept or event—that can have data stored about it. Think of entities as nouns. Examples: a customer, student, car or product. Typically shown as a rectangle.
    - ❖ Relationships describe how entities interact with each other.
    - ❖ Attributes are the detailed information collected for entities (including the characteristics of the data etc.).
    - ❖ Cardinality defines the numerical attributes of the relationship between two entities or entity sets.
    - ❖ There are three types of relationships between entities
        - One to one relationships
        - One to many relationships
        - Many to many relationships

4. What is the Data Flow diagram and its purpose?

- ❖ DFD are used by information technology professionals and system analysts to document and show users how data moves between different processes in a system.
- ❖ Data flow diagrams provide a graphical representation of how information moves between processes in a system.

5. In which phase it is used in software engineering?

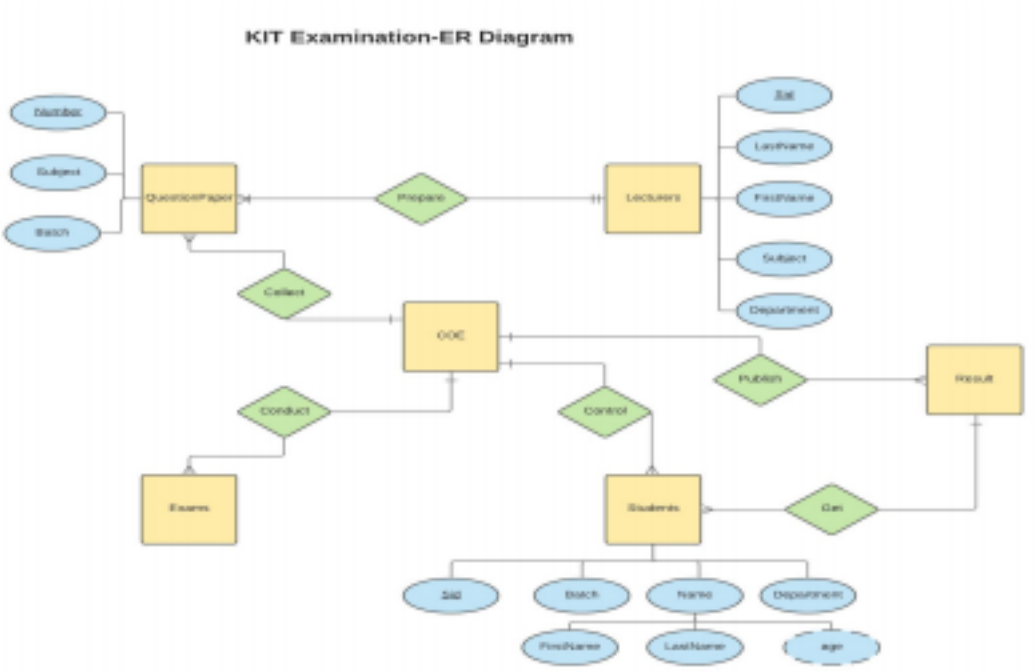
DFD is used in both the analysis and design phase of the SDLC.

6. Define the different components used in the DFD (External entities, Process, Data sources, Flow, etc).

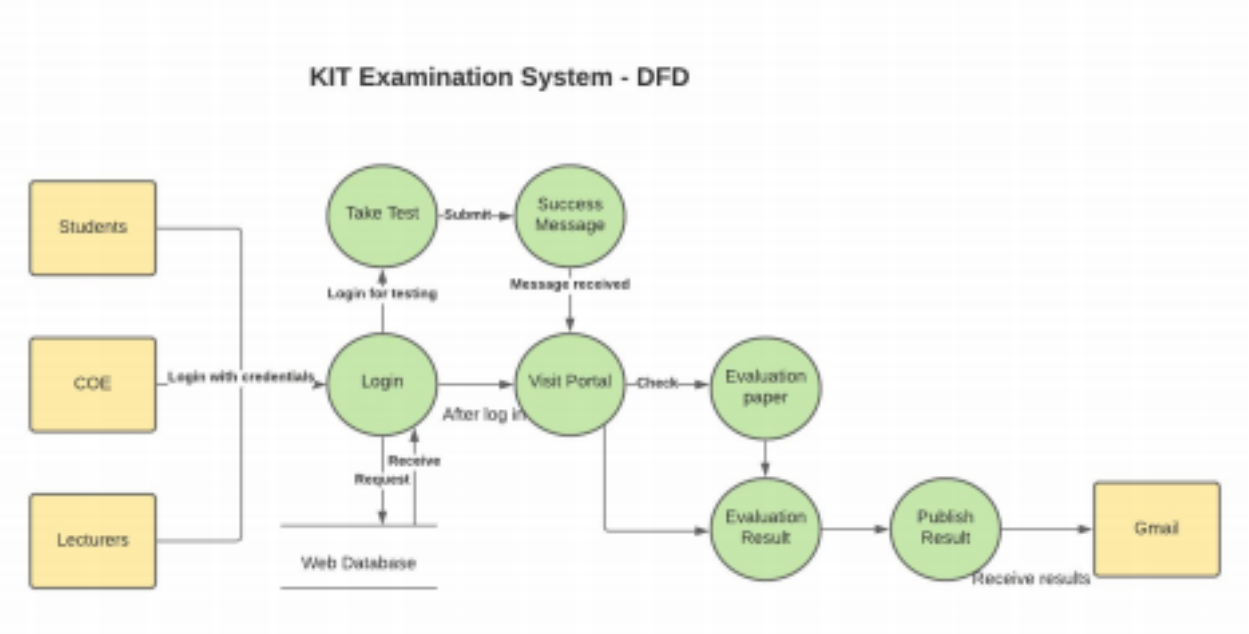
- ❖ External entities are also known as terminators, sources/sinks, and actors, define the sources and destinations of information entering and leaving the system.
- ❖ Flows define the interfaces between the components within the system, and the system and its external components.
- ❖ Stores represent information (i.e., data or control) at rest. Stores are used when different processes need to share information but are active at different times.
- ❖ Data stores are created to store information for later use. They represent data that is temporarily at rest between processes.
- ❖ Processes are also known as data transforms. Processes transform input flows into output flows in a defined manner.

7. Draw the ER and DF Diagram for the following

- KIT examination system (The same we have used for BPMN)
    - ER Diagram

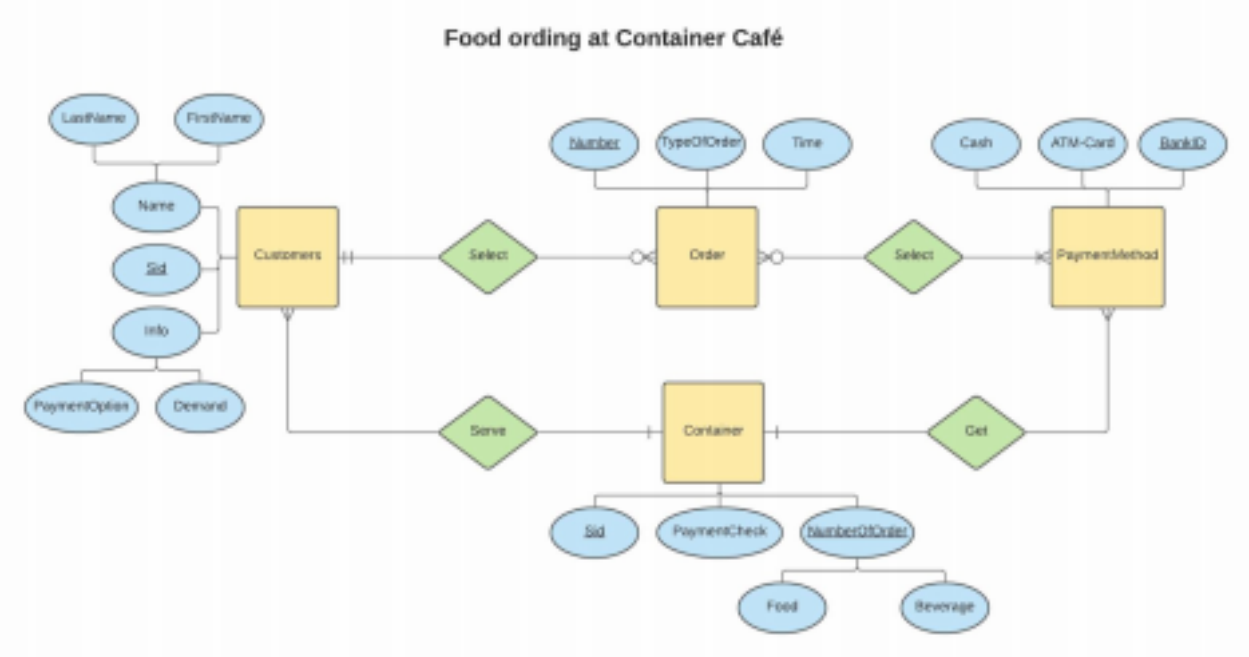


● DF Diagram

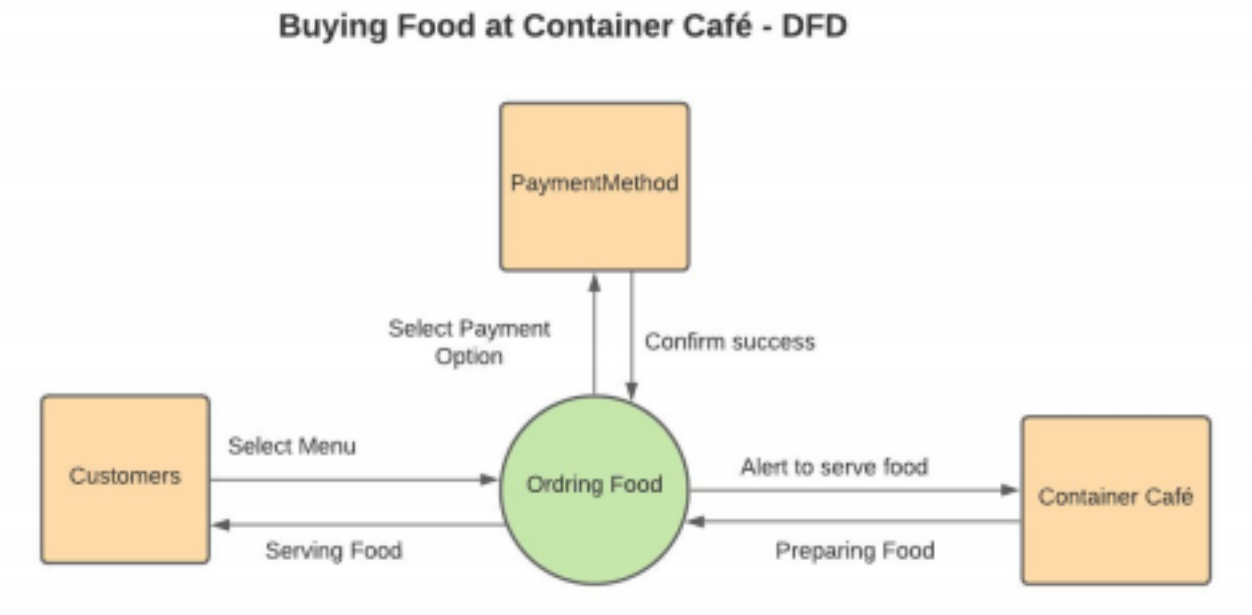


- Buying food from container cafe

● ER Diagram


Food ording at Container Café
LastName
FirstName
Name
Sid
Info
PaymentOption
Demand
Customers
Select
Order
Number
TypeOfOrder
Time
Select
PaymentMethod
Cash
ATM-Card
BankID
Serve
Container
Get
Sid
PaymentCheck
NumberOfOrder
Food
Beverage

- DF Diagram


Buying Food at Container Café - DFD
PaymentMethod
Select Payment Option
Confirm success
Customers
Select Menu
Ordring Food
Alert to serve food
Container Café
Serving Food
Preparing Food