

ADVANCED PROGRAMMING DEVELOPMENT METHODOLOGY

Q.1 What is SDLC?

Ans. The SDLC-System Development Life Cycle-is the set of activities that are carried out to develop and implement an information system.

Q.2 Define cost-benefit analysis?

Ans. Cost-benefits analysis can be defined as the method by which we find and estimate the value of the gross benefits of new system specifications.

Q.3 What are the differences between hardware, software and firmware?

Ans. Hardware is the physical tangible components of a computer system. Software is the computer programs that are govern the operation of computers. Firmware is the prewritten programs permanently stored in read-only memory. These configure the computer and are not easily modifiable by the user.

Q.4 Define DDLC?

Ans. DDLC refers to Database Development Life Cycle. The DDLC is the set of activities that are carried out to develop and implement databases.

Q.5 What is ER Model?

Ans. The ER model or Entity-Relationship model is a high level, conceptual model that describes data as entities, attributes and relationships.

Q.6 Define Entity, attribute and relationship?

Ans. An Entity is an object that exists and is distinguishable from other objects.
An Attribute is a property of an entity.
A Relationship is an association among several entities.

Q.7 Define weak and strong entities. How are these otherwise known as?

Ans. A Weak entity (also called dependent entity) is the one whose existence depends on the existence of another entity e.g., the entity MARKS is weak entity as it depends upon STUDENT entity for its existence.

A strong entity (or independent entity) does not depend upon any other entity for its existence.

Q.8 What type of relationships can be depicted through E/R model?

Ans. Three types of relationships can be depicted:

- (i) One-to-one
- (ii) One-to-many
- (iii) Many-to-many

Q.9 What is a composite attribute? Give example.

Ans. Composite Attribute. An attribute which can be decomposed further is composite attribute. If an attribute is a group of properties, it is called Composite attribute e.g., Address is a composite attribute as it is a group of sub-properties such as house, areas, city-state etc.

Q.10 What are sub entities and super entities?

Ans. A Sub entity (or subtype) is dependent entity of a superentity. And the attributes of the super entity always apply to all its sub entities but the converse is not true.

Q.11. Identify the dependent and independent entities out of the following:

- (i) STUDENT and GRADE
- (ii) CUSTOMER and PHONE
- (iii) SUPPLIER and ADDRESS

Ans. STUDENT-Independent entity, GRADE-Dependent entity.

- (i) CUSTOMER-Independent entity, PHONE-Dependent entity.
- (ii) SUPPLIER-Independent entity, ADDRESS-Dependent entity.

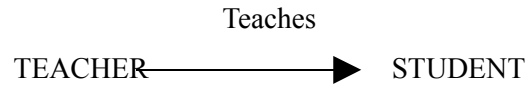
Q.12 Define what is meant by an entity, attributes, entity set, and relationship.

Ans. **Entity**: An entity is a tangible object that exists in this real world. Or we can say that all such items about which some relevant information may be stored are called entities. For example, TEACHER, COURSE

Attributes: The qualities of an entity which can be stored as information are called the attributes. For example, if TEACHER is an entity then Teacher_id, Teacher_name are all attributes.

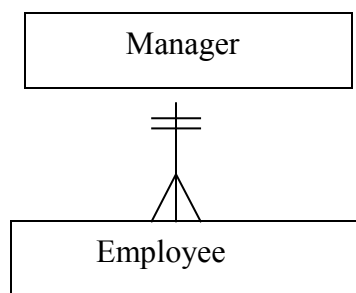
Entity sets: A set of entities of some type i.e. which share common properties constitutes an entity set. For Example STUDENT is an entity set.

Relationship: A relationship is an association among several entities. For Example,



In this TEACHER and STUDENT are entities and teaches is the relationship between them.

Q.13 Depict the relationship between employees who can report to more than one manager. Also write what kind of relation ship is this?

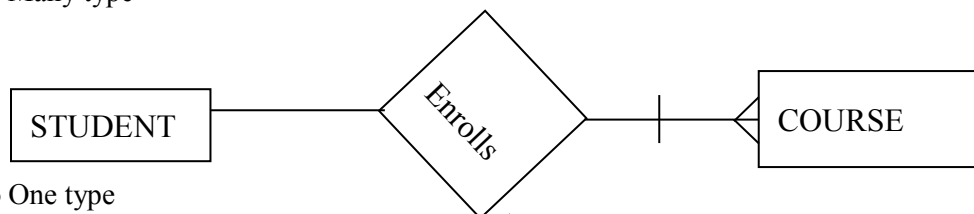


Q.14 Identify the various types of relationships from the following and also show them diagrammatically

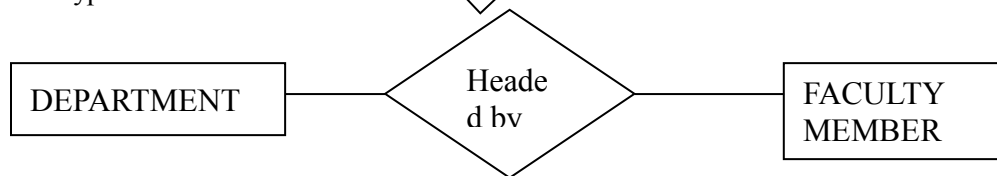
- (i) A student enrolls for various courses in a college.
- (ii) A Department is headed by a faculty member.

Ans.

i) One-to Many type



ii) One-to One type



Q.15 Write short note on data dictionary.

Ans. Data dictionary A data dictionary defines each term (called a data element) encountered during the analysis and design of new system. Data elements can describe files, data flows, or processes. For example, suppose you want to print the vendor's name and address at the bottom of a cheque. The data dictionary might define vendor's name and address as follows.

Vendor's name and address= Vendor name+
 Street+
 City+
 State+
 Pin+
 Phone+
 Fax+
 Email

This definition becomes a part of the data dictionary that ultimately will list all key terms used to describe various data flows and files.

Each entry that is made to data dictionary forces analysis to classify their understanding of the data in the system.. Once completed, the dictionary will be used by analyst, programmers and system users to access details on data elements.