Solved Question Paper

December 2015

2.ii)Difference between Relational Database and Object Oriented Database.(4marks)

Relational Database	Object oriented database
Database that stores data in tables that consist of rows and columns. Each row has a primary key and each column has a unique name.	Database that stores data in objects. An object is an item that contains data, as well as the actions that read or process the data.
relational database rely on relational model.	Object database rely on OOP
relational data base handle a single data.	Object database can handle different types of data.
It is based on mathematical principles called relational algebra.	It is based on objects.
Associations are not directly represented.	Associations are directly represented.
Faster for complex queries	Slower than relational databases for relational databases.
Supports multiple writers and readers.	Does not support multiple writers and readers.
RDBMS store only data.	OODBMS store data and methods.

5.b)What is generalization ? Draw a diagram for representing hierarchy of different types of vehicles.(5marks)

Generalization extracts the common features from a collection of classes, and placing them higher in the inheritance hierarchy, in a super class. The process of extracting common characteristics from two or more classes and combining them into a generalized superclass, is called Generalization.

Generalization is an "is-a-kind-of" relationship. It is represented by a triangle followed by a line. It is a bottom-up design approach. The higher level entity must have lower level entities. Generalization is always applied on a group of entities. Generalization reduces the size of a schema. If the entities, that are figured out to create a schema shares some similar features, then they are combined to form a higher-level entity.

Generalization results in forming a single entity from multiple entities. Generalization clubs all the entities that share some common properties to form a new entity. Takes all the information that have universal nature within the entities and then forms a new entity.

Let us name some vehicles, we say car, bus, ship, boat, aeroplane, helicopter

We can generalize these vehicles:

- Car, bus, all are land vehicles, we generalize these entities to a new higher level entity **Land**.
- The entities ship, boat, are water vehicles so, they form a new higher level entity **Water**.
- The entity aeroplane, helicopter combined to form the higher level entity **Air**.
- Now, we have three higher level entity land, water, air which can be clubbed further to form a new higher level entity **Vehicle**.