**Lab Assignment: 05**

**OBJECT:** Draw the ***Entity-Relationship*** Diagram of ***Hotel Management.***

**INTRODUCTION:**

An Entity Relationship or ER Diagram is a type of flowchart that illustrates how "*entities*" such as people, objects, and concept related to each other with in a system. ER diagrams are most often used to design or debug relational databases in the fields of software engineering business information systems, educations and research. ER diagram, also known as ERD'S or ER models, they are used a defined set of symbols such as rectangles, diamonds ovals as connecting lines to depicts the interconnectedness of entities, relationship and their attributes.

***HISTORY OF ER DIAGRAM:***

Although data modeling has become a necessity around 1970’s there was no standard way of model databases or business processes. Although many solutions were proposed and discussed none were widely proposed. ***Peter Chen*** is credited with introducing the widely adopted ER model in his paper ***“Towards a Unified View of Data”***. The focus was on entities and relationships and he introduced a program representation for database design as well. His model was inspired by the data structure diagrams introduced by “*Charles Bachman*” one of the early forms of the ER diagrams and the evaluation of the data modeling.

**USES OF ER DIAGRAMS:**

1. ER Models in databases diagrams.
2. ER Models in software engineering.

During the planning stages of the software projects. They help to identify different systems elements and their relationships with each other. It is often uses at the basis for data flow diagrams as they are commonly used.

***ER* DIAGRAM SYMBOLS AND NOTATIONS:**

***Entities*** are represented by means of rectangles. Rectangles are named with the entity set they represent.

***Attributes*** are the properties of the entities. Attributes are represented by means of ellipses.

One attributes and is directly connected to its entity rectangle, if the attributes are composite they further divided in a tree like structure. Every node is then connected to its attributes. This is composite attributes are represent by ellipses that are connected with an ellipse.

An attribute is always written in uppercase letter.

***Multi-valued attributes*** are depicted by double ellipse.

*Weak entity* is depicted by double rectangle.

***Relationship*** is represented by diamond box.

It shows relationship between two or more entities.

***Degree of Relationship:***It is the number of the entity types that participates in that relationship.

|  |  |
| --- | --- |
| Unary |  |
| Binary |  |
| Ternary |  |

*Relationship is* classified into four parts:

* One to One
* One to Many
* Many to One
* Many to Many

Peter Chen, the father of ER modeling said in his seminal paper:

"*The entity-relationship model adopts the more natural view that the real world consists of entities and relationships. It incorporates some of the important semantic information about the real world.*"