Experiment 4

ER Diagram

Software engineering

Introduction

ER Model is used to model the logical view of the system from data perspective which consists of these components:

Entity, Entity Type, Entity Set

An Entity may be an object with a physical existence – a person, car, house, or employee – or it may be an object with a conceptual existence – a company, a job, or a university course.

An Entity is an object of Entity Type and set of all entities is called as entity set. e.g.; E1 is an entity having Entity Type Student and set of all students is called Entity Set.

# Attributes

Attributes are the properties which define the entity type. For example, Roll Number, Name, DOB, Age, Address, Mobile Number are the attributes which defines entity type Student. In ER diagram, attribute is represented by an oval.

1. **Key Attribute**

The attribute which uniquely identifies each entity in the entity set is called key attribute. For example, Roll No will be unique for each student. In ER diagram, key attribute is represented by an oval with underlying lines.

1. **Composite Attribute**

An attribute composed of many other attributes is called as composite attribute. For example, Address attribute of student Entity type consists of Street, City, State, and Country. In ER diagram, composite attribute is represented by an oval comprising of ovals.

1. **Multivalued Attribute**

An attribute consisting more than one value for a given entity. For example, Phone Number (can be more than one for a given student). In ER diagram, multivalued attribute is represented by double oval.

1. **Derived Attribute**

An attribute which can be derived from other attributes of the entity type is known as derived attribute. e.g.; Age (can be derived from DOB). In ER diagram, derived attribute is represented by dashed oval.

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