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Database Systems

**Exam I corrections:**

**[Q.1]**

**(a) Explain disjointness and completeness constraint in EER (Enhanced ER) modeling.**

**Supertype** is an entity type that has got relationship (parent to child relationship) with one or more subtypes and it contains attributes that are common to its subtypes. **Subtypes** are subgroups of the supertype entity and have unique attributes, but they will be different from each subtype.

**Completeness constraint** is a type of constraint that addresses the question whether an instance of a supertype must also be a member of at least one subtype.

**Disjointness constraint** is a type of constraint that addresses the question whether an instance of a supertype may simultaneously be a member of two (or more) subtypes.

**(b) Explain total/partial constraint and cardinality constraint in EER modeling.**

In relation database, **cardinality constraint** of a relationship is the number of instances of entity A that can be associated with entity B. There is a minimum and minimum cardinality for each relationship. Minimum cardinality is the least number of relationship instances an entity must participate in and maximum cardinality is the greatest number of relationship instances an entity must participate in.

**Total Participation** is when each entity in the entity set occurs in at least one relationship in that relationship set.

**Partial Participation** is when each entity in the entity set may not occur in at least one relationship in that relationship set.

**(c) Explain what the minimal super key is.**

First of all, in a relational database, a **superkey** is a set of attributes within a table that can be used to uniquely identify each tuple. A **minimum super key**, also known as a candidate key is a minimal set of attributes necessary to identify each tuple in a table.