Entity-Relationship Model:			
Word:	**Definition:**	**Example:**	**Repres-ented by:**
Entity Set	a group of similar abstract objects.	In a movie database design, movies and stars are entities, and studios are another kind of entity.	Rectangles
	It's like a class in object-oriented programming but it only defines the structure of data, not operations on data.	They each form an **entity set.**	
Attributes	These are properties of entities in an entity set	In a movie database design, attributes could be "title" and "length" for movies	Ovals
	Attributes are usually implemented as relations, but not all relations come from entity sets	-	
	Attributes are of simple types, like strings or numbers.	-	
Relati-onships	These are connections between two or more entity sets, such as the "Stars-in" relationship between the Movies and Stars entity sets.		Diamonds
	A relationship means that an entity in one set is connected to an entity in another set.		
	Binary relationships between two entity sets are most common, but the E/R model allows for any number of entity sets to be involved in a relationship.		
Tuple	a row in a table in a database, representing a unique instance of an entity or a combination of entities		
	It contains values for each attribute of the entity.		

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Entity-Relationship Model: (cont)	
Instances of an E/R Diagram:	describe database schemas, and while no actual data exists in the E/R model, it can be useful to visualize it as if it did.
	Entities have values for each attribute, and relationships connect entities
	The instance of a relationship is a set of tuples that are connected by the relationship.
	These tuples are not the same as those in a relation, and their components are entities instead of primitive types.
	Each row of the table representing the relationship set is a list of connected entities from different entity sets.

Keys	
Keys	an attribute or set of attributes which helps you to identify a row(tuple) in a relation (table)
	They allow you to find the relation between two tables
Candidate Key	The minimal set of attributes that can uniquely identify a tuple(row) is known as a candidate key
	The value of the Candidate Key is unique and non-null for every tuple
	All are “prime attributes.” Same as candidate key.
Primary Key	There can be more than one candidate key in relation out of which one can be chosen as the primary key
	Exactly one
	Every primary key is unique and non-null
	Whichever is most flexible for us can be used as a primary key
	Primary key(PK) is a subset of a Candidate key(CK)
	There can be one or more CK, but exactly one PK
Alternate key	The candidate key other than the primary key is called an alternate key
	Out of EmployeeNum, Driving_license and PermitNumber, if EmployeeNum is selected as Primary Key, then the Driving_license and PermitNumber automatically become the Alternate Keys
Super keys	The set of attributes that can uniquely identify a tuple(row) is known as a Super Key

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Keys (cont)	
	Two keys together that create a unique attribute is a super key
	Adding zero or more attributes to the candidate key generates the super key
	You can say every candidate key is a super key, but vice versa is not true.
Foreign Key	Foreign keys are the column of the table which is used to point to the primary key of another table.

Weak/Strong Entity Types	
Weak Entity Types:	
A Weak Entity Type is an entity type that does not have sufficient attributes to form a primary ke	
The existence of a weak entity depends on the existence of an identifying or owner entity type.	
The relationship between them is called an identifying (ID) relationship.	
The identifying relationship type is always many-to-one from the weak entity type to the identifying entity type.	
The weak entity type must have a discriminator (one or more attributes) for distinguishing among its entities.	
For example, in an employees database, Child entities exist only if their corresponding Parent employee entity exists.	
Weak Entity Types in an ERD:	
A weak entity type is identified by a double rectangle.	
The discriminator is underlined by a dashed line.	
An identifying relationship is identified by a double diamond.	
The fact that the existence of the weak entity requires the existence of an owner entity is captured by the total participation of the weak entity type in the relationship (double line).	
The primary key of a weak entity type is the combination of the primary key of its owner type and its discriminator, e.g., (NI#, Cname) for Child.	
Strong Entity	An entity with a Primary Key

Single & Mutliple-table Queries	
SELECT	desired attributes
FROM	one or more tables
WHERE	conditions on rows of the tables are satisfied
DELETE	Delete rows from a table based on a specific condition
	e.g DELETE FROM table_name WHERE condition;
AVG	calculate the average of a numeric column in a table?
	e.g.SELECT AVG(column_name) FROM table_name;
DISTINCT	retrieve unique values in a column or a set of columns.

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