

**Explain the following terms briefly:**

**Attribute** - Describes the characteristics of an entity.

**Domain** - The set of possible values a field in an attribute could hold.

**Entity** - Easily defined and distinguishable from other objects.

**Relationship** - The association of two or more entities.

**Entity set** - A set of similar entities.

**Relationship set** - A set of similar relationships.

**One-to-many relationship** - An entity from an entity set has a relationship with many entities in another set.

**Many-to-many relationships** - An entity from an entity set has a relationship with many entities in another set and vice versa.

**Participation constraint** - Identifies how many times an object in an entity set participates in a relationship when connected to an entity set through a relationship. With partial participation, this constraint shows that only a few entities participate in the relationship defined. However, with total participation, this constraint shows that all the entities in the entity set participate in the relationship.

**Overlap constraint** - Whether an entity can exist in both the subclasses or not. For example, if an entity can exist in two subclasses then the entity is satisfying overlap constraint.

**Covering constraint** - Whether all the entities in the subclasses form a superclass when combined.

**Weak entity set** - Needs to be identified by the primary key attribute of another entity set otherwise the entity set can't be identified uniquely.

**Aggregation** - In the ER diagram, represented by using a dashed box, a relationship between an entity and a relationship.

**Role indicator** - The purpose in the relationship

Although you always wanted to be an artist, you ended up being an expert on databases because you love to cook data and you somehow confused the database with data baste. Your old love is still there, however, so you set up a database company, ArtBase, that builds a product for art galleries. The core of this product is a database with a schema that captures all the information that galleries need to maintain. Galleries keep information about **artists, their names (which are unique), birthplaces, age, and style of art**. For each piece of **artwork, the artist, the year it was made, its unique title, its type of art (e.g., painting, lithograph, sculpture, photograph), and its price must be stored**. Pieces of **artwork are also classified into groups of various kinds, for example, portraits, still lifes, works by Picasso, or works of the 19th century; a given piece may belong to more than one group**. Each group is identified by a name (like those just given) that describes the group. Finally, **galleries keep information about customers. For each customer, galleries keep that person's unique name, address, total amount of dollars spent in the gallery (very important!), and the artists and groups of art that the customer tends to like**.

Draw the ER diagram for the database.

- ENTITIES - ARTIST, CUSTOMERS, ARTWORK
- RELATIONSHIP- PHOTOGRAPH, PURCHASE

