**QUESTION -1**

4.4- Create an ERD based on the Crow’s Foot notation using the following requirements:

• An INVOICE is written by a SALESREP. Each sales representative can write

many invoices, but each invoice is written by a single sales representative.

• The INVOICE is written for a single CUSTOMER. However, each customer can

have many invoices.

• An INVOICE can include many detail lines (LINE), each of which describes one

product bought by the customer.

• The product information is stored in a PRODUCT entity.

• The product’s vendor information is found in a VENDOR entity.

**Solution:**

1. List out entity classes along with appropriate attributes.







1. Identify all necessary relationships.

|  |  |  |
| --- | --- | --- |
| **ENTITY** | **RELATIONSHIP** | **ENTITY** |
| INVOICE | Is written by | SALESREPRESENTATIVE |
| INVOICE | Is written for | CUSTOMER |
| INVOICE | include | INVOICE LINE |
| INVOICE LINE | contain | PRODUCT |
| VENDOR | supplies | PRODUCT |

1. Identify the connectivity for each relationship.

|  |  |  |
| --- | --- | --- |
| **ENTITY** | **Connectivity** | **ENTITY** |
| INVOICE | M:1 | SALESREPRESENTATIVE |
| INVOICE | M:1 | CUSTOMER |
| INVOICE | 1:M | INVOICE LINE |
| INVOICE LINE | M:1 | PRODUCT |
| VENDOR | 1:M | PRODUCT |

1. Draw ER / EER model using MS Visio.



**QUESTION -2**

**4.7. United Helpers is a nonprofit organization that provides aid to people after natural disasters.**

**Based on the given brief description of operations, create the appropriate fully labeled**

**CROW’S foot ERD**

1. List out entity classes along with appropriate attributes.



1. Identify all necessary relationships.

|  |  |  |
| --- | --- | --- |
| **ENTITY** | **RELATIONSHIP** | **ENTITY** |
| LIST | Used by | TASK |
| VOLUNTEER | assigned | ASSIGNMENT |
| ASSIGNMENT | has | TASK |
| TASK | creates | PACKAGE |
| CONTENT | has | PACKAGE |
| CONTENT | has | PACKAE |

1. Identify the connectivity for each relationship.

|  |  |  |
| --- | --- | --- |
| **ENTITY** | **Connectivity** | **ENTITY** |
| LIST | 1:M | TASK |
| VOLUNTEER | 1:M | ASSIGNMENT |
| ASSIGNMENT | M:1 | TASK |
| TASK | 1:M | PACKAGE |
| CONTENT | M:1 | PACKAGE |
| CONTENT | M:1 | PACKAE |

1. Draw ER / EER model using MS Visio.



**QUESTION -3**

**3-25.** For a library, the entity type HOLDING has four subtypes:

BOOK, AUDIO BOOK, DVD, and SOFTWARE. Draw a

separate EER diagram segment for each of the following

situations.

1. **List out entity classes along with appropriate attributes.**

* HOLDING (SUPERTYPE ENTITY)

(HOLDING No, HOLD\_Date, RETURN DATE,HOLDING Type)

* BOOK(SUBTYPE ENTITY)

(ISBN NUM,BOOK TILE)

* AUDIO BOOK (SUBTYPE ENTITY)

(AUDIO BOOK ID, AUDIO LENGTH)

* DVD (SUBTYPE ENTITY)

(DVD ID,DVD CAPACITY)

* SOFTWARE(SUBTYPE ENTITY)

(SOFTWARE ID)

1. **Identify all necessary relationships.**

HOLDING is a supertype, while BOOK,AUDIO BOOK,DVD, SOFTWARE are subtype. while BOOK,AUDIO BOOK,DVD, SOFTWARE have **Is-A** relationship with HOLDING.

1. **Identify the connectivity for each relationship.**

There is **1:1** cardinality relationship between supertype and subtype.

1. **Draw ER / EER model using MS Visio.**

**HOLDING**

HOLDING No

HOLD\_Date,

RETURN DATE

HOLDING Type

**DVD**

DVD ID

DVD CAPACITY

**AUDIO BOOK**

AUDIO BOOK ID

AUDIO LENGTH

**Book**

ISBN NUM BOOK TILE

**SOFTWARE**

SOFTWARE ID