Assignment: Relationships in Databases

# One-to-One (1:1) Relationship

Each person has one unique passport. Example tables:

Person Table:

|  |  |
| --- | --- |
| PersonID | Name |
| 1 | Ali Mohamed |

Passport Table:

|  |  |  |
| --- | --- | --- |
| PassportID | PersonID | PassportNumber |
| 101 | 1 | P1234567 |

Diagram:

1 To 1

Passport

Person

Connection:

Each person has one unique passport.   
Person.PersonID is connected to Passport.PersonID.

# One-to-Many (1: N) Relationship

A customer can have many orders. Example tables:

Customer Table:

|  |  |
| --- | --- |
| CustomerID | Name |
| 1 | Ahmed Yusuf |

Orders Table:

|  |  |  |
| --- | --- | --- |
| OrderID | CustomerID | OrderDate |
| 201 | 1 | 2024-01-10 |
| 202 | 1 | 2024-02-15 |

Diagram:

One to Many

Order 1

Order 2

Customer

Connection: A customer can make many orders, but each order belongs to one customer.   
Customer.CustomerID is connected to Orders.CustomerID.

# 3. Many-to-Many (M: N) Relationship

Students can enroll in many courses, and courses can have many students. Example tables:

Student Table:

|  |  |
| --- | --- |
| StudentID | Name |
| 1 | Layla Ali |
| 2 | Omar Hassan |

Course Table:

|  |  |
| --- | --- |
| CourseID | CourseName |
| 301 | Math |
| 302 | Science |

StudentCourse Table:

|  |  |
| --- | --- |
| StudentID | CourseID |
| 1 | 301 |
| 1 | 302 |
| 2 | 301 |

Diagram M To M

Course

Student course

Student

Connection:   
A student can enroll in many courses, and each course can have many students.  
Student.StudentID and Course.CourseID are both connected to Student Course.