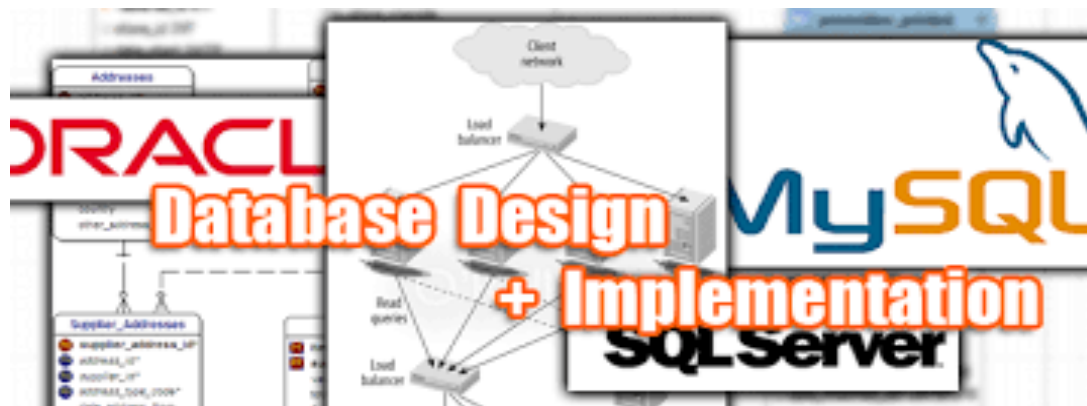


Database Design and Implementation

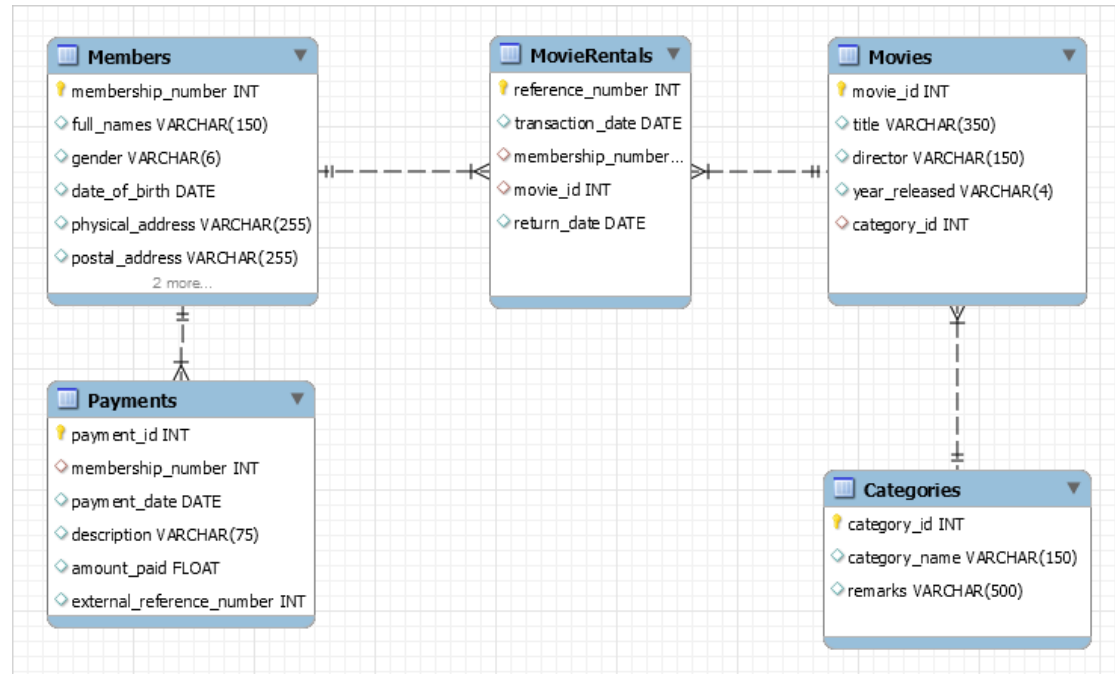
Database Design and Implementation

- This module will introduce you to the principles and practice of designing and implementing database systems.



Database Design and Implementation

- You will gain competence in designing relational databases using Entity Relationship Modelling.



Database Design and Implementation

- You will implement relational databases using SQL data definition language.
- You will query the relational database using SQL data manipulation language.

```
--Select All rows from Customers in UK  
  
SELECT *  
  FROM New_Customers  
 WHERE Country='UK'
```



The screenshot shows a SQL query execution window with a 'Results' tab. The query is: `SELECT * FROM New_Customers WHERE Country='UK'`. The results are displayed in a table with 7 rows and 7 columns: CustomerID, ContactName, ContactTitle, Address, City, and Country. The first row is selected.

	CustomerID	ContactName	ContactTitle	Address	City	Country
1	AROUT	Thomas Hardy	Sales Representative	120 Hanover Sq.	London	UK
2	BSBEV	Victoria Ashworth	Sales Representative	Fauntleroy Circus	London	UK
3	CONSH	Elizabeth Brown	Sales Representative	Berkeley Gardens 12 Brewery	London	UK
4	EASTC	Ann Devon	Sales Agent	35 King George	London	UK
5	ISLAT	Helen Bennett	Marketing Manager	Garden House Crowther Way	Cowes	UK
6	NORTS	Simon Crowther	Sales Associate	South House 300 Queensbridge	London	UK
7	SEVES	Hari Kumar	Sales Manager	90 Wadhurst Rd.	London	UK

Database Design and Implementation

Example 1 – Key/Value Paradigm

Simple Data Model

Key Space : /user/userId

```
Value : {  
  "name" : "User",  
  "namespace" : "com.company.avro",  
  "type" : "record",  
  "fields": [  
    {"name": "userId", "type": "Integer", "default": 0},  
    {"name": "firstName", "type": "String", "default": ""},  
    {"name": "lastName", "type": "String", "default": ""}  
  ]  
}
```

- You will be introduced to the concepts and use of NoSQL databases.