DENG CA1 Assignment

My Database Design

By Muhammad Nuhsyah Putra Bin Ramlee(2045302)

DIT/FT/2B22

# D. Submission Template

## Entity Relationship Diagram

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## Database Diagram from SQL Server after tables creation with PK and FK

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## Database Design Explanation

List all the tables and their fields. Indicate the PK and FK and their referenced tables.

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| **Table** | **Purpose** | **Field** | **DataType** | **Primary Key** | **Foreign Key** |
| Store | *The store table is for to list all different kind of stores* | Store\_ID | INT  NOT NULL | Store\_id  (Simple) |  |
| Location | varchar(25) |
| Street | varchar(255) |
| State | varchar(50) |
| City | varchar(25) |
| ZipCode | INT |
| Employee | *The Employee table is for to list all different of Employee that assign to different kind of stores* | Employee\_id | INT  NOT NULL | Employee\_id  (Simple ) | **storeID**  **references**  Store  (**storeID)**  **(Simple)** |
| First\_name | varchar(255) |
| Last\_name | varchar(255) |
| minit | varchar(255) |
| street | varchar(255) |
| city | varchar(100) |
| state | varchar(100) |
| zipcode | INT |
| country | varchar(255) |
| title | varchar(50) |
| paytype | varchar(50) |
| payrate | decimal(18,2) |
| storeID | INT |
| Customer | **The customer table is for list of different kind of customers info.** | CustomerID | int not null | CustomerID  (Simple) |  |
| First\_name | varchar(50) |
| Last\_name | varchar(50) |
|  | Password | varchar(25) |
|  | Phone | varchar(50) |
|  | Driver\_License | varchar(25)  not null |
|  | Card\_number | varchar(50) not null |
|  | Card\_type | varchar(20) not null |
|  | Minit | varchar(255) |
|  | Street | varchar(255) |
|  | State | varchar(50) |
|  | City | varchar(50) |
|  | ZipCode | INT |

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| movie | The movie table is for list of different kind of movie and it is references to be assign to catalog table. | Catalog\_id | int not null | Catalog\_id  (Simple) | **Catalog\_id**  **references**  Catalog  (**Catalog\_id)**  (Simple) |
| Movie\_name | varchar(255) |
| director | varchar(100) |
| producer | varchar(255) |
| Actor | varchar(255) |
| Actor2 | varchar(255) |

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| VideoCamera | The videocamera is for list of different kind of videocameraand it is references to be assign to catalog table. | Catalog\_id | int not null | Catalog\_id  (Simple) | **Catalog\_id**  **references**  Catalog  (**Catalog\_id)**  (Simple) |
| Video\_camera\_brand | varchar(100) |
| madeBy | varchar(100) |
| purchasedDate | DATE |

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| VCR | The VCR is for list of different kind of VCR and it is references to be assign to catalog table. | Catalog\_id | int not null | Catalog\_id  (Simple) | **Catalog\_id**  **references**  Catalog  (**Catalog\_id)**  (Simple) |
| Type | Varchar(50) |
| VCR\_brand | varchar(100) |
| madeBy | varchar(100) |
| purchasedDate | DATE |

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| Catalog | The catalog is for list of different kind of movie and equipments  Of the charge and the images that is being assign to the different kind of type of catalog | Catalog\_id | INT NOT NULL | Catalog\_ID  (Simple) |  |
| chargeperday | DECIMAL(18,2) |
| Imageurl | varchar(255) |

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| Transaction\_tab | The transaction  \_tab is for different kind of transaction that the different kind of customer has make to the list of different kind of movie and equipments | Transaction\_ID | int not null | Transaction\_ID  (Simple) | **storeID**  **references**  Store  (**storeID)**  Customer\_ID  references  Customer  (Customer\_ID)  (Composite) |
| Transaction\_Type | varchar(20) |
| Customer\_ID | INT NOT NULL |
| Transaction\_Date | DATE |
| Due\_date | DATE |
| return\_date | DATE |
| rental\_charge | Decimal(18,2) |
| penalty\_Charge | Decimal(18,2) |
| TotalCharge | Decimal(18,2) |
| Store\_ID | INT NOT NULL |

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| Item | The Item table is for list of different kind of movie and equipments that been assign for multiple of copy that can show copy of same items and it is references to the catalog table. | Catalog\_id | INT NOT NULL | Catalog\_id  COPY\_ID  (Composite) | **Catalog\_id**  **references**  Catalog  (**Catalog\_id)**  **(Composite)** |
| COPY\_ID | INT NOT NULL |

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| TransactionItem | The TransactionItem is to list of different kind of items and multiple same copy of item and to have transaction to be included and it is references to the item table. | Catalog\_id | int not null | Catalog\_id  Transaction\_ID  COPY\_ID  (Composite) | **Catalog\_id**  COPY\_ID  **references**  Item  (Catalog\_Id,COPY\_ID)  (Composite) |
| Transaction\_ID | int not null |
| COPY\_ID | int not null |

## SQL Queries and Results

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| Query 1 | Query 1 Results |
| select Store\_ID, count(Transaction\_ID)'Total number of outgoing movies',MONTH(Transaction\_Date) ' Per Month'  from Transaction\_tab  where Transaction\_Type='rent' and Transaction\_ID between 21001 and 21020  GROUP BY Store\_ID,  MONTH(Transaction\_Date)  order by 1 asc |  |
| Query 2(i) | Query 2(i) Results |
| /\*(per customer) \*/  select customer\_id,AVG(DATEDIFF(day,Transaction\_Date,return\_date)) 'Average Number of rental days'  from Transaction\_tab  where rental\_charge != 0  GROUP BY customer\_ID; |  |
| Query 2(ii) | Query 2(ii) Results |
| /\*(per title)\*/  select Transaction\_ID,AVG(DATEDIFF(day,Transaction\_Date,return\_date))'Average Number of rental days'  from Transaction\_tab  where Transaction\_ID between 21001 and 21020 and rental\_charge != 0  GROUP BY Transaction\_ID; |  |
| Query 3 | Query 3 Results |
| select top 10 Transaction\_ID'titles for last year'  from Transaction\_tab  where Transaction\_Type='reserve' and Transaction\_ID between 21001 and 21020  order by Transaction\_ID desc |  |
| Query 4  select customer\_ID'Best Customer',TotalCharge'Money Paid'  from Transaction\_tab  order by TotalCharge desc; | Query 4 Results |
| Query 5 | Query 5 Results |
| SELECT SUM(TotalCharge) 'Total Revenue of the company', SUM(rental\_Charge) 'Without Penalty', MONTH(Transaction\_Date) 'Month'  FROM Transaction\_tab  WHERE YEAR(GETDATE()) > Year(DATEADD(YEAR,-1,Transaction\_Date))  GROUP BY MONTH(Transaction\_Date) |  |
| Query 6 | Query 6 Results |
| select customer\_ID 'Per Customer',sum(penalty\_charge)'total of penalty charge'  from Transaction\_tab  where penalty\_Charge !=0  GROUP BY Customer\_ID,penalty\_Charge |  |