**Assignment 2 – Database Design**

**Student Names**

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**Abstract**

In this assignment, Database is created for a Rental Company which provide rental car and accommodation. There are 4 entities in this database **Customer\_Details, Rental\_information, Cars\_t, Payment\_t, Branch\_t.** Each entities holds information regarding its name, for example, Customer\_Details entity will have customer full name, mobile number, address, e-mail address and ID-proof.

**Constraints/Business Rules**

The constraints in the assignment are as follow:

1. Cust\_ID as Primary Key in Customer\_Details table.
2. Rnt\_ID as Primary Key in Rental\_Information table.
3. Cust\_ID as Foreign Key in Payment\_t table referencing to Cust\_ID in Customer\_Details table.
4. Car\_ID as Foreign Key in Branch\_t Table referencing to Car\_ID in Car\_T table.
5. Car-ID as Primary Key in Car\_T table.
6. Payment\_ID as Primary Key in Payment\_T table.
7. Rnt\_ID as Foreign Key in Cars\_t table referencing to Rnt\_ID in Rental\_Information table.
8. Branch\_ID as Primary Key in Branch\_T table.
9. Rental\_Information can have one and only one Customer\_Details.
10. Customer\_Details can have 1 to many Payment\_t.
11. Payment\_t can have one and only one Customer\_Details
12. Payment\_t can have only one and only one Rental\_Information and vice-versa.
13. Rental\_Information can have one to many Cars\_t.
14. Cars\_t can have one to many Rental\_Information.
15. Rental\_Information can have one and only one Cars\_t.
16. Branch\_t can have one to many Cars\_t.
17. Cars\_t can have one and only one Branch\_t.

**Entities**

Database Name: Rental\_cars\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Revision: 1

Date: 2021-07-16

Authors: Suraj Mittal, Jay Patel

|  |  |  |
| --- | --- | --- |
| **Entity Name** | **Entity Type** | **Relates to** |
| **Customer\_Details** | Table |  |
| **Rental\_Information** | Table | Payment\_t |
| **Cars\_t** | Table | Rental\_information |
| **Branch\_t** | Table | Cars\_t |
| **Payment\_t** | Table | Customer\_Details |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Notes:

**Entity Details**

## **Fields form – Customer\_Details**

**Database Name: Rental\_cars**  **Revision: 1.0**

**Entity Name: Customer\_Details** **Date: 2021-07-16**

**Author:** Jay Patel

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data type** | **Field Properties** | **Relates to** |
| **Cust\_ID** | Integer | Primary key |  |
| **Cust\_FirstName** | Varchar(30) | Not Null |  |
| **Cust\_LastName** | Varchar(30) | Not Null |  |
| **Cust\_MobileNo** | Integer | Not Null |  |
| **Cust\_EmailAddress** | Varchar(50) | Null |  |
| **Cust\_LicenceNo** | Integer | Not NULL |  |

**Notes:**

1. **Field form – Rental\_Information\_t**

Database Name: \_\_Rental Cars\_\_\_\_\_\_\_ Revision: \_\_\_1\_\_\_\_\_\_\_\_\_\_\_\_

Entity Name: Rental\_Information\_T Date: \_16 July 2021\_\_\_\_

Author: \_\_Jay\_Patel\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data type | Field Properties | Relates to |
| Rnt\_ID | Int | Primary key, surrogate key |  |
| Rnt\_PickupDate | Date | Not Null |  |
| Rnt\_ReturnDate | Date | Not Null |  |
| Rnt\_InitialMeterReading | Integer | Not Null |  |
| Rnt\_FinalMeterReading | Integer | Not Null |  |
| Rnt\_ChangesPerMile | Integer | Not Null |  |
| Payment\_ID | Integer | Not Null | Payment\_t |

## **Field form – Cars\_t**

**Database Name: Rental\_cars**  **Revision: 1.0**

**Entity Name: cars\_t**   **Date: 2021-07-16**

**Author:** Suraj Mittal

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data type** | **Field Properties** | **Relates to** |
| **Car\_ID** | Integer | Primary Key, Surrogate Key |  |
| **Car\_Model** | VARCHAR2(30) | Not Null |  |
| **Car\_Make** | VARCHAR2(25) | Not Null |  |
| **Car\_InsuranceNo** | Integer | Not Null |  |
| **Car\_NumberPlate** | VARCHAR2(10) | Alternate Key |  |
| **Car\_Availability** | Char(3) | Not Null |  |
| **Rnt\_ID** | Integer | Not Null | Rental\_Information |
|  |  |  |  |
|  |  |  |  |

**Notes:**

## **4 Fields Form – Payment\_t**

**Database Name: Rental\_cars**  **Revision: 1.0**

**Entity Name: Payment\_t**  **Date: 2021-07-16**

**Author:** Suraj Mittal

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data type** | **Field Properties** | **Relates to** |
| **Payment\_ID** | Integer | Primary key, surrogate key |  |
| **Payment\_date** | Date | Not Null |  |
| **Payment\_amount** | Integer | Not Null |  |
| **Payment\_mode** | VARCHAR(10) | Not Null |  |
| **Cust\_ID** | Integer | Not Null | Customer\_Details |
|  |  |  |  |
|  |  |  |  |

**Notes**

## **5 Fields form – Branch\_T**

Database Name: \_\_Rental Cars\_\_\_\_\_\_\_ Revision: \_\_\_1\_\_\_\_\_\_\_\_\_\_\_\_

Entity Name: \_Branch\_t Date: \_16 July 2021\_\_\_\_

Author: \_\_Jay\_Patel\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data type | Field Properties | Relates to |
| Branch\_ID | Int | Primary key, surrogate key |  |
| Branch\_Name | Varchar(50) | Not Null |  |
| Branch\_Address | Varchar(200) | Not Null |  |
| Car\_ID | Integer | Not Null | Cars\_t |
|  |  |  |  |
|  |  |  |  |

**ER Diagram**

**Graphical user interface, application, table

Description automatically generated**

**Basic ERD**

**Diagram

Description automatically generated**