**Vehicle rental Database Project**

The vehicle rental industry plays a very important role in country’s economy and in this modern era, the demand in this industry increase as people are started like travel more than anything else. My group has show interest in this topic because They are not only using the rental car for travelling but also some of Them do Full-time work through rental car. The vehicle rental industry has a exponential opportunity as they required large and complex data to manage and Database will make more efficient customer services and also improve rental experience.

In this modern era, its very hard to manage large and complex data without database and this vehicle rental industry required the most amount of data like booking rental car, customer services, customer information, tracking, rental car transaction etc. owing to lack of database it leads to poor customer experience and inefficient decision making.

Our team’s aim is to build a powerful database to improve not only business decision but also improve user experience. The Database plays a crucial role in software application because it will manage all type of Data such as rental data, customer data, cost data, booking data, tracking time data and many more, because of this powerful database it can transform all the things from experience to managing all data efficiently.

Requirements

1. **User login/registration** for customer and working employees.
2. **User profile management** any type of rental history or driving history, first name, last name.
3. **Vehicle record** availability of vehicle for rental and vehicle services and vehicle condition
4. **Payment transaction** as conformation of payment and receipt of payment
5. **Booking system** make sure that which vehicle is available
6. **Customer feedback** for collecting overall experience of user and try to improve every time
7. **Background check** ensure that person has driving license and no criminal charges going on.
8. **Customer vehicle preference** ensure to recommend based on customer preferred type of vehicle.

ERD:

A diagram of a vehicle

Description automatically generated

Data Dictionary-

TABLE: **Customer**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Column** | **Data Type** | **Size, Precision** | **Default** | **PK/FK** | **Required** | **Range** | **Sample Data** | **Notes** |
| CustomerID | INT | 4 |  | PK | Y | 1-9999 | 1001 | Auto numbered identity |
| First\_Name | VARCHAR | 50 |  |  | Y |  | Bob |  |
| Last\_Name | VARCHAR | 50 |  |  | Y |  | McKenzie |  |
| BirthDate | Date |  |  |  | Y |  | 1980-01-01 | Date of Birth (YYYY/MM/DD) |
| Email | VARCHAR | 100 |  |  | Y |  | bobmackenzie@gmail.com | Unique |
| Phone | VARCHAR | 15 |  |  | Y |  | 1234567890 | Assuming North American phone number |
| LicenseNumber | VARCHAR | 20 |  |  | Y |  | A1234567 | Unique |

TABLE: **Vehicle**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Column** | **Data Type** | **Size, Precision** | **Default** | **PK/FK** | **Required** | **Range** | **Sample Data** | **Notes** |
| Vehicle\_ID | INT | 4 |  | PK | Y | 1-9999 | A123 | Auto numbered identity |
| Make | VARCHAR | 50 |  |  | Y |  | Toyota |  |
| Model | VARCHAR | 50 |  |  | Y |  | Camry |  |
| Year | INT | 4 |  |  | Y | 1900-2100 | 2020 |  |
| LicensePlate | VARCHAR | 20 |  |  | Y |  | ABC1234 | Unique |
| RentalStatus | VARCHAR | 20 |  |  | Y |  | Available |  |
| VehicleTypeID | INT | 4 |  | FK | Y | 1-9999 | 1526 | References VehicleTypes(VehicleTypeID) |

TABLE: **Vehicletypes**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Column** | **Data Type** | **Size, Precision** | **Default** | **PK/FK** | **Required** | **Range** | **Sample Data** | **Notes** |
| VehicleType\_ID | INT | 4 |  | PK | Y | 1-9999 | 1001 | Auto numbered identity |
| TypeName | VARCHAR | 50 |  |  | Y |  | SUV |  |

TABLE: **Insurance**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Column** | **Data Type** | **Size, Precision** | **Default** | **PK/FK** | **Required** | **Range** | **Sample Data** | **Notes** |
| Insurance\_ID | INT | 4 |  | PK | Y | 1-9999 | 5001 | Auto numbered identity |
| Provider | VARCHAR | 50 |  |  | Y |  | TD Canada insurance |  |
| PolicyNumber | VARCHAR | |  | | --- | | 20 |  |  | | --- | |  | |  |  | Y |  | P1234567 | Unique |
| Ins\_StartDate | DATE |  |  |  | Y |  | 2024-01-01 |  |
| Ins\_EndDate | DATE |  |  |  | Y |  | 2024-12-31 |  |
| CoverageAmount | FLOAT | 2 | 0.00 |  | Y | 0-999999.99 | 50000.00 | Monetary value |

TABLE: **Rental**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Column** | **Data Type** | **Size, Precision** | **Default** | **PK/FK** | **Required** | **Range** | **Sample Data** | **Notes** |
| Rental\_ID | INT | 4 |  | PK | Y | 1-9999 | 3001 | Auto numbered identity |
| Rent\_StartDate | DATE |  |  |  | Y | 1-999 | 2024-01-01 |  |
| Rent\_EndDate | DATE |  |  |  | Y |  | 2024-01-07 |  |
| TotalAmount | FLOAT | 2 | 0.00 |  | Y | 0-9999.99 | 350.00 | Monetary value |
| Customer\_ID | INT | 4 |  | FK | Y | 1-9999 | 1001 | References Customer(CustomerID) |
| Vehicle\_ID | INT | 4 |  | FK | Y | 1-9999 | 2001 | References Vehicle(VehicleID) |
| Employee\_ID | INT | 4 |  | FK | Y | 1-9999 | 4001 | References Employees(EmployeeID) |

TABLE: **Employee**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Column** | **Data Type** | **Size, Precision** | **Default** | **PK/FK** | **Required** | **Range** | **Sample Data** | **Notes** |
| Employee\_ID | INT | 4 |  | PK | Y | 1-9999 | 4001 | Auto numbered identity |
| EmpFirstName | VARCHAR | 50 |  |  | Y |  | Jane |  |
| EmpLastName | VARCHAR | 50 |  |  | Y |  | Smith |  |
| EmpEmail | VARCHAR | 100 |  |  | Y |  | janesmith@example.com | Unique |
| EmpPhone | VARCHAR | 15 |  |  | Y |  | 1234567890 |  |
| EmpPosition | VARCHAR | 50 |  |  | Y |  | Manager |  |

TABLE: **Payment**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Column** | **Data Type** | **Size, Precision** | **Default** | **PK/FK** | **Required** | **Range** | **Sample Data** | **Notes** |
| Payment\_id | INT | 4 |  | PK | Y | 1-9999 | 6001 | Auto numbered identity |
| PaymentDate | DATE |  |  |  | Y |  | 2024-01-01 |  |
| Amount | FLOAT | 2 | 0.00 |  | Y | 0-9999.99 | 350.00 | Monetary value |
| PaymentMethod | VARCHAR | 50 |  |  | Y |  | Credit Card |  |
| Rental\_ID | INT | 4 |  | FK | Y | 1-9999 | 3001 | References Rental(RentalID) |