Logo, company name

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**Database System I**

**Project Documentation**

**Car Rental System**

|  |  |  |
| --- | --- | --- |
| **Team** | | |
| Members | | Group |
| 1 | Beshoy Saad Louis Abdu | 3 |
| 2 | Hassan Mohamed Hassan Mohamed Abdelshafy | 3 |
| 3 | Remonda Malak Nageb | 3 |
| 4 | John safwat boles | 3 |
| 5 | Bashar walid sayed | 2 |
| 6 | Amir Sameh Saad Youssef | 2 |

**Presented to**

Dr. Hanafy Mahmud

Dr. Haydi Refaey

Car rental services

**Introduction**

Car rental services System. Our system provides that the customer can rent any car or motorcycle based on what model he wants and the kind of car he wants. Our system provides kind of services, and we will discuss these services below.

**There are five services our car rental System service:**

**Long term services:** this term is between 2 weeks to a month duration, and this service provides to the customer specific cars that will be useful to the long-term service and help him in what he wants the car for.

**Short term services:** this term is between a day to a week duration, and these services have specific cars for the short duration of the service.

**Wedding service**: this service is between 2 hours to maximally 1 day duration, this service provides the customers with and driver for the car and another option that the customer can customize the car as he wants.

**Motorcycle services:** this service is between a day to a week duration; this service helps the customer that don’t want to rent a car and want to make it easier on them and to prevent the car traffic etc...

**Special event:** this services our System provides every 2 months and event; like discounts on the cars, special offers, free prices, membership offers, etc…

# **As our system provides many services it must have a Database to organize the Data and Relations between all the actors that uses our system:**

1. A Car is described by a Car\_ID (unique), Borrower\_ID (unique within Borrower), Department\_ID (unique within Department), color, manufacture company (unique within make), engine capacity, horsepower, maximum speed, transmission type, year, fuel, trunk size, seats, traction type, fuel tank capacity, Number of cylinders, Price, Rental Points.
2. A Borrower is described by a number (unique), name, gender, National ID, Phone number, Email, Password, Username, City, Country, Nationality
3. A Employee described by a number (unique), Name, Gender, Age, Email, Username, Password, City, Country, Nationality, Address, Salary, Banking information, Graduation state and department number(unique within department) and each department has department number (unique), name, location, start date.
4. Make is the company that build cars it described by a manufacture company (unique), origin country, agent
5. each employee works in a department and there are some employees that manage departments and the borrower can do reservation of car which is controlled by some departments.

# **Project’s Functional View**

# Maintain Basic Data

* **Car** **(**Car\_ID, Borrower\_ID, Department\_ID, Color, Manufacture company, Engine capacity, Horsepower, Maximum speed, Transmission Type, Year, Fuel, Trunk Size, Seats, Traction Type, Fuel tank capacity, Number of cylinders, Price, Rental Points**)**
* **Borrower (**Borrower\_ID, Name, Gender, Age, National ID, Phone number, Email, Password, Username, City, Country, Nationality)
* **Employee (**Employee\_ID, Department\_ID, Department ID, Name, Gender, Age, Email, Username, Password, City, Country, Nationality, Address, Salary, Banking information, Graduation state**)**
* **Department (**Department\_ID, Name, Location, Start Date**)**
* **Rent (**Renta**l**\_ID, Borrower\_ID, Car\_ID, Duration, Rental Date, Payment method, **)**
* **Works On** (Department\_ID, Car\_ID**)**
* **Manage (**Employee\_ID, Car\_ID, Employee Name, Department Name**)**
* **Works IN (**Employee\_ID, Department\_ID, Employee Name, Department Name, Hire Date**)**

# Issue Query Subsystems

* Search by CarID
* Search by Department ID
* Search by EmployeeID
* Search by BorrowerID

# Perform transactions

* What transactions need to Add (all entities).
* What transactions need to delete (all entities).
* What transactions need to update (all entities).

**Entity Relationship Diagram**

Diagram

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Mapping

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  | | --- | | **Car** | | Car\_ID (PK)  Borrower\_ID (FK)  Department\_ID (FK)  Color  Manufacture company  Engine capacity  Horsepower  Maximum speed  Transmission Type  Year  Fuel  Trunk Size  Seats  Traction Type  Fuel tank capacity  Number of cylinders  Price  Rental Points | | |  | | --- | | **Borrower** | | Borrower\_ID (PK)  Name  Gender  Age  National ID  Phone number  Email, Password  Username  City  Country  Nationality | | |  | | --- | | **Employee** | | Employee\_ID (PK)  Department\_ID (FK)  Name  Gender  Age  Email  Username  Password  City  Country  Nationality  Address  Salary  Banking information  Graduation state | |
| |  | | --- | | **Department** | | Department\_ID (PK)  ManagerID (FK)  Name  Location  Start Date | | |  | | --- | | **Make** | | manufacture company (PK)  origin country  Agent | | |  | | --- | | **Reservation** | | Reservation\_ID (PK)  borrower\_ID, Car\_ID (FK)  Department\_ID (FK) | |

**Database Relationships and Tables with Sample Data**

Diagram, schematic

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