

→ **User**(Username, Password)

← **Administrator** (Username)

← **GTCR Employee**(Username)

← **GTCR Student/Member**(Username, FirstName, LastName, MiddleInitial, Address, PhoneNumber, EmailAddress, Card No, DrivingPlanType)

← **Driving Plan** (Type, Discount, Monthly Payment, Annual Fees)

← **Credit Card** (CardNo, Name on Card, CVV, Expiry Date, Billing Address)

→ **Car** (Vehicle Sno, Auxiliary Cable, Transmission Type, Seating Capacity, BluetoothConnectivity, Daily Rate, Hourly Rate, Color, Type, CarModel, UnderMaintenance Flag, CarLocation)

← **Location** (Location Name, Capacity)

→ **Reservation** (ResID, Username, PickupDateTime, ReturnDateTime, Late By, Return Status, Estimated Cost, LateFees, ReservationLocation, VehicleSno)

*Reservation Table can also have an attribute called Reservation Id which can be used in the table below.

← **Reservation Extended Time** (ResID, ExtendedTime)

→ **Maintenance Request** (Vehicle Sno, DateTime, Username)

→ **Maintenance Request Problems** (Vehicle Sno, DateTime, Problem)

CREATE TABLE STATEMENTS

```
CREATE TABLE `car` (  
  `VehicleSno` int(10) unsigned NOT NULL AUTO_INCREMENT,  
  `Auxiliary Cable` bit(1) DEFAULT NULL,  
  `Transmission_Type` bit(1) NOT NULL,  
  `Seating_Capacity` int(10) unsigned DEFAULT NULL,  
  `BluetoothConnectivity` bit(1) NOT NULL,  
  `DailyRate` int(10) unsigned NOT NULL,  
  `HourlyRate` int(10) unsigned NOT NULL,  
  `Color` varchar(10) NOT NULL,  
  `Type` varchar(45) NOT NULL,  
  `CarModel` varchar(45) NOT NULL,  
  `UnderMaintenanceFlag` bit(1) NOT NULL,  
  `CarLocation` varchar(45) NOT NULL,  
  PRIMARY KEY (`VehicleSno`),  
  KEY `FK_car_Location` (`CarLocation`),  
  CONSTRAINT `FK_car_Location` FOREIGN KEY (`CarLocation`) REFERENCES  
  `location` (`LocationName`),  
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

```
CREATE TABLE `credit card` (  
  `CardNo` int(11) NOT NULL,  
  `Name` varchar(45) DEFAULT NULL,  
  `CVV` int(11) DEFAULT NULL,  
  `ExpiryDate` date DEFAULT NULL,  
  `BillingAdd` varchar(45) DEFAULT NULL,  
  PRIMARY KEY (`CardNo`)  
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```

```
CREATE TABLE `drivingplan` (  
  `Type` varchar(45) NOT NULL,  
  `Discount` int(11) DEFAULT NULL,  
  `MonthlyPayment` int(11) DEFAULT NULL,  
  `AnnualFees` int(11) DEFAULT NULL,  
  PRIMARY KEY (`Type`)  
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```

```
CREATE TABLE `location` (  
  `LocationName` varchar(45) NOT NULL,  
  `Capacity` int(10) unsigned DEFAULT NULL,  
  PRIMARY KEY (`LocationName`)  
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

```

CREATE TABLE `maintenance_request` (
  `VehicleSno` int(10) unsigned NOT NULL AUTO_INCREMENT,
  `RequestDateTime` datetime NOT NULL,
  `Username` varchar(45) NOT NULL,
  PRIMARY KEY (`VehicleSno`,`RequestDateTime`) USING BTREE,
  CONSTRAINT `FK_VehicleSno` FOREIGN KEY (`VehicleSno`) REFERENCES `car`
(`VehicleSno`)
  CONSTRAINT `FK_Username` FOREIGN KEY (`Username`) REFERENCES
`GTCREmployee` (`Username`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

```

```

CREATE TABLE `maintenance_request_problems` (
  `VehicleSno` int(10) unsigned NOT NULL AUTO_INCREMENT,
  `RequestDateTime` datetime NOT NULL,
  `Problem` varchar(45) NOT NULL,
  PRIMARY KEY (`VehicleSno`,`RequestDateTime`,`Problem`) USING BTREE,
  CONSTRAINT `FK_maintenance_request_problems_2` FOREIGN KEY (`VehicleSno`,
`RequestDateTime`) REFERENCES `maintenance_request` (`VehicleSno`,
`RequestDateTime`),
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

```

```

CREATE TABLE `member` (
  `Username` varchar(45) NOT NULL,
  `FirstName` varchar(45) NOT NULL,
  `LastName` varchar(45) NOT NULL,
  `MiddleInit` varchar(1) DEFAULT NULL,
  `Address` varchar(45) DEFAULT NULL,
  `PhoneNo` varchar(45) DEFAULT NULL,
  `EmailAddress` varchar(45) DEFAULT NULL,
  `CardNo` int(10) unsigned NOT NULL,
  `DrivingPlan` varchar(45) NOT NULL,
  PRIMARY KEY (`Username`),
  CONSTRAINT `FK_Username` FOREIGN KEY (`Username`) REFERENCES `User`
(`Username`),
  CONSTRAINT `FK_CardNo` FOREIGN KEY (`CardNo`) REFERENCES `credit card`
(`CardNo`),
  CONSTRAINT `FK_DrivingPlanType` FOREIGN KEY (`DrivingPlan`) REFERENCES
`drivingplan` (`Type`),
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

```

```

CREATE TABLE `reservation` (
  `ResID` int(10) unsigned NOT NULL AUTO_INCREMENT,
  `Username` varchar(45) NOT NULL,
  `PickUpDateTime` datetime NOT NULL,
  `ReturnDateTime` datetime NOT NULL,
  `LateBy` varchar(10) DEFAULT NULL,
  `ReturnStatus` varchar(10) NOT NULL,
  `EstimatedCost` int(10) unsigned NOT NULL,
  `LateFees` int(10) unsigned DEFAULT NULL,
  `ReservationLocation` varchar(45) NOT NULL,
  `VehicleSno` int(10) unsigned NOT NULL,
  PRIMARY KEY (`ResID`),
  CONSTRAINT `FK_reservation_2` FOREIGN KEY (`VehicleSno`) REFERENCES `car`
  (`VehicleSno`)
  CONSTRAINT `FK_reservation_1` FOREIGN KEY (`ReservationLocation`)
  REFERENCES `location` (`LocationName`)
  CONSTRAINT `FK_reservation_3` FOREIGN KEY (`Username`) REFERENCES
  `Member` (`Username`)

) ENGINE=InnoDB DEFAULT CHARSET=latin1;

```

```

CREATE TABLE `reservation_extended_time` (
  `ResID` int(10) unsigned NOT NULL AUTO_INCREMENT,
  `Extended_Time` datetime NOT NULL,
  PRIMARY KEY (`ResID`),
  CONSTRAINT `FK_reservation_extended_time_1` FOREIGN KEY (`ResID`)
  REFERENCES `reservation` (`ResID`),
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

```

```

CREATE TABLE `user` (
  `Username` varchar(45) NOT NULL,
  `Password` varchar(45) NOT NULL,
  PRIMARY KEY (`Username`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;

```

```

CREATE TABLE `GTCREmployee` (
  `Username` varchar(45) NOT NULL,
  PRIMARY KEY (`Username`)
  FOREIGN KEY (`Username`) REFERENCES `User` (`Username`),
) ENGINE=InnoDB DEFAULT CHARSET=utf8;

```

```
CREATE TABLE `Administrator` (  
  `Username` varchar(45) NOT NULL,  
  PRIMARY KEY (`Username`)  
  FOREIGN KEY (`Username`) REFERENCES `User` (`Username`),  
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```