**PART 2- MAPPING OF EER SCHEMA DESIGN**

**CUSTOMER**

|  |  |  |  |
| --- | --- | --- | --- |
| Id\_no | Name | Phone | Email |

**CAR\_TYPE**

|  |  |  |  |
| --- | --- | --- | --- |
| Type | Daily Rate | Weekly Rate | Rental\_Location |

**CAR**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Vechile\_Id | Model | Type | Owner | Year |

**RESERVATION**

|  |  |  |  |
| --- | --- | --- | --- |
| Reservation\_no | Id\_no | Vechile\_Id | Amount Due |

**DAILY RENTAL**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Id\_no | Vechile\_id | Start Date | Return Date | No. of Days |

**WEEKLY RENTAL**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Id\_no | Vechile\_id | Start Date | Return Date | No. of Weeks |

**AVAILABILITY**

|  |  |  |  |
| --- | --- | --- | --- |
| Vechile\_Id | Is\_Available | Avail\_start | Avail\_end |

**CREATE TABLE STATEMENTS**

**CUSTOMER**

CREATE TABLE `rentals`.`customer` ( `custid` INT NOT NULL , `name` VARCHAR(25) NOT NULL , `phone` INT(10) NOT NULL , `email` TEXT NOT NULL , PRIMARY KEY (`custid`)) ENGINE = InnoDB;

**CAR\_TYPE**

CREATE TABLE `rentals`.`car\_type` ( `car\_type` TEXT NOT NULL , `daily\_rate` FLOAT(10) NOT NULL , `weekly\_rate` FLOAT(10) NOT NULL , `location` TEXT NOT NULL , PRIMARY KEY (`car\_type`(10))) ENGINE = InnoDB;

**CAR**

CREATE TABLE `rentals`.`car` ( `car\_id` INT(10) NOT NULL , `model` TEXT NOT NULL , `year` INT(4) NOT NULL , `car\_type` TEXT NOT NULL , `owner` TEXT NOT NULL , PRIMARY KEY (`car\_id`), UNIQUE `car\_type` (`car\_type`)) ENGINE = InnoDB;

ALTER TABLE `car` ADD FOREIGN KEY (`car\_type`) REFERENCES `car\_type`(`car\_type`) ON DELETE CASCADE ON UPDATE CASCADE;

**RESERVATION**

CREATE TABLE `rentals`.`reservation` ( `res\_id` INT(10) NOT NULL , `amt\_due` FLOAT(10) NOT NULL , `car\_id` INT(10) NOT NULL , `custid` INT(10) NOT NULL , PRIMARY KEY (`res\_id`(10))) ENGINE = InnoDB;

ALTER TABLE `reservation` ADD CONSTRAINT `f\_carid` FOREIGN KEY (`car\_id`) REFERENCES `car`(`car\_id`) ON DELETE CASCADE ON UPDATE CASCADE; ALTER TABLE `reservation` ADD CONSTRAINT `f\_custid` FOREIGN KEY (`custid`) REFERENCES `customer`(`custid`) ON DELETE CASCADE ON UPDATE CASCADE;

**DAILY\_RENTAL**

CREATE TABLE `rentals`.`daily\_rental` ( `car\_id` INT(10) NOT NULL , `custid` INT(10) NOT NULL , `days` INT(10) NOT NULL , `start\_date` DATE NOT NULL , `return\_date` DATE NOT NULL ) ENGINE = InnoDB;

ALTER TABLE `daily\_rental` ADD CONSTRAINT `f\_d\_carid` FOREIGN KEY (`car\_id`) REFERENCES `car`(`car\_id`) ON DELETE CASCADE ON UPDATE CASCADE; ALTER TABLE `daily\_rental` ADD CONSTRAINT `f\_d\_custid` FOREIGN KEY (`custid`) REFERENCES `customer`(`custid`) ON DELETE CASCADE ON UPDATE CASCADE;

**WEEKLY\_RENTAL**

CREATE TABLE `rentals`.`weekly\_rental` ( `car\_id` INT(10) NOT NULL , `custid` INT(10) NOT NULL , `weeks` INT(10) NOT NULL , `start\_date` DATE NOT NULL , `return\_date` DATE NOT NULL ) ENGINE = InnoDB;

ALTER TABLE `weekly\_rental` ADD CONSTRAINT `f\_w\_carid` FOREIGN KEY (`car\_id`) REFERENCES `car`(`car\_id`) ON DELETE CASCADE ON UPDATE CASCADE; ALTER TABLE `weekly\_rental` ADD CONSTRAINT `f\_w\_custid` FOREIGN KEY (`custid`) REFERENCES `customer`(`custid`) ON DELETE RESTRICT ON UPDATE RESTRICT;

**AVAILABILITY**

CREATE TABLE `rentals`.`availability` ( `car\_id` INT(10) NOT NULL , `is\_available` VARCHAR(10) NOT NULL , `avai\_start` DATE NOT NULL , `avai\_end` DATE NOT NULL ) ENGINE = InnoDB;

ALTER TABLE `availability` ADD CONSTRAINT `f\_a\_carid` FOREIGN KEY (`car\_id`) REFERENCES `car`(`car\_id`) ON DELETE CASCADE ON UPDATE CASCADE;

**DESCRIPTION**

In the EER Diagram the following are considered as tables CUSTOMER, CAR\_TYPE, CAR, DAILY\_RENTAL, WEEKLY\_RENTAL, AVAILABILITY, RESERVATION.

The **Id\_no** of DAILY\_RENTAL, WEEKLY\_RENTAL, RESERVATION **References** the **Id\_no** of CUSTOMER Table.

The **Vechile\_Id** of DAILY\_RENTAL, WEEKLY\_RENTAL, AVAILABILITY, RESERVATION **REFERENCES** **Vechile\_Id** of CAR.

The **Type** of CAR **REFERENCES** CAR\_TYPE

Tables such as DAILY\_RENTAL, AVAILABILITY and WEEKLY\_RENTAL were newly added. The RESERVATION table has a **Total Participation** of daily\_rental and weekly\_rental table with **OVERLAPPING Specialization**.

**Amount\_due** and **Return\_date** are **weak attributes** because their values need to be computed from the other attributes.

**RESERVATION** and **AVAILABILITY** TABLES are **WEAK ENTITIES**.

**KEY, REFERENTIAL INTEGRITY CONSTRAINT:**

In CUSTOMER TABLE Car\_Id, name, phone, email is NOT NULL.

In CAR\_TYPE TABLE Type, daily\_rate, weekly\_rate is NOT NULL.

In CAR TABLE car\_type has UNIQUE Key Constraint.

The **Type** of CAR **REFERENCES** CAR\_TYPE of attribute car\_type. When Car\_type is deleted or Updated the changes will be made in CAR table by using of **ON DELETE CASCADE ON UPDATE CASCADE.**

The **Vechile\_Id** of DAILY\_RENTAL, WEEKLY\_RENTAL, AVAILABILITY, RESERVATION **REFERENCES** **Vechile\_Id** of CAR. When **Vechile\_Id** of CAR is type is deleted or Updated the changes will be made in DAILY\_RENTAL, WEEKLY\_RENTAL, AVAILABILITY, RESERVATION tables by using of **ON DELETE CASCADE ON UPDATE CASCADE.**

The **Id\_no** of DAILY\_RENTAL, WEEKLY\_RENTAL, RESERVATION **References** the **Id\_no** of CUSTOMER Table. When Id\_no of CUSTOMER is deleted or Updated the changes will be made in DAILY\_RENTAL, WEEKLY\_RENTAL, RESERVATION tables by using of **ON DELETE CASCADE ON UPDATE CASCADE.**