Activity 2:-   **P.Sahith Sai**

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Space Research Data System:

1. Create table Satellites with SatelliteID INT PRIMARY KEY and Name VARCHAR(50) NOT NULL.

2. Create table Missions with MissionID INT PRIMARY KEY and MissionName VARCHAR(50) UNIQUE NOT NULL.

3. Create table Experiments with ExperimentID INT PRIMARY KEY, SatelliteID INT FOREIGN KEY

REFERENCES Satellites(SatelliteID), MissionID INT FOREIGN KEY REFERENCES

Missions(MissionID).

4. Add CHECK DataCollected>0 in Experiments.

5. Add DEFAULT Status='Ongoing' in Experiments.

6. Add NOT NULL constraint on Name in Satellites.

7. Add UNIQUE constraint on MissionName in Missions.

8. Drop table Experiments.

9. Drop table Satellites.

```
mysql> Create database Space_Research_Data_System;
Query OK, 1 row affected (0.07 sec)

mysql> Use  Space_Research_Data_System;
Database changed
mysql> CREATE TABLE Satellites (SatelliteID INT PRIMARY KEY, Name VARCHAR(50) NOT NULL);CREATE TABLE Satellites (SatelliteID INT PRIMARY KEY, Name V
ARCHAR(50) NOT NULL);
Query OK, 0 rows affected (0.10 sec)

ERROR 1050 (42S01): Table 'satellites' already exists
mysql> CREATE TABLE Missions (MissionID INT PRIMARY KEY, MissionName VARCHAR(50) UNIQUE NOT NULL);
Query OK, 0 rows affected (0.03 sec)

mysql> CREATE TABLE Experiments (ExperimentID INT PRIMARY KEY, SatelliteID INT, MissionID INT, FOREIGN KEY (SatelliteID) REFERENCES Satellites(Satel
liteID), FOREIGN KEY (MissionID) REFERENCES Missions(MissionID));
Query OK, 0 rows affected (0.10 sec)

mysql> Desc Satellites;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| SatelliteID | int         | NO   | PRI | NULL    |       |
| Name        | varchar(50) | NO   |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
```

```
mysql> Desc Experiments;
+--------------+------+------+-----+---------+-------+
| Field        | Type | Null | Key | Default | Extra |
+--------------+------+------+-----+---------+-------+
| ExperimentID | int  | NO   | PRI | NULL    |       |
| SatelliteID  | int  | YES  | MUL | NULL    |       |
| MissionID    | int  | YES  | MUL | NULL    |       |
+--------------+------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> Desc Missions;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| MissionID   | int         | NO   | PRI | NULL    |       |
| MissionName | varchar(50) | NO   | UNI | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> ALTER TABLE Experiments ADD CONSTRAINT chk_DataCollected CHECK (DataCollected > 0);
ERROR 1054 (42S22): Unknown column 'DataCollected' in 'check constraint chk_DataCollected expression'
mysql> ALTER TABLE Experiments ADD DataCollected INT;
Query OK, 0 rows affected (0.11 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE Experiments ADD CONSTRAINT chk_DataCollected CHECK (DataCollected > 0);
Query OK, 0 rows affected (0.13 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE Experiments ADD Status VARCHAR(20) DEFAULT 'Ongoing';
Query OK, 0 rows affected (0.05 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE Satellites MODIFY Name VARCHAR(50) NOT NULL;
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE Missions ADD CONSTRAINT unq_MissionName UNIQUE (MissionName);
Query OK, 0 rows affected, 1 warning (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 1
```

```
mysql> Desc Experiments;
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| ExperimentID  | int         | NO   | PRI | NULL    |       |
| SatelliteID   | int         | YES  | MUL | NULL    |       |
| MissionID     | int         | YES  | MUL | NULL    |       |
| DataCollected | int         | YES  |     | NULL    |       |
| Status        | varchar(20) | YES  |     | Ongoing |       |
+---------------+-------------+------+-----+---------+-------+
5 rows in set (0.00 sec)

mysql> Desc Satellites;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| SatelliteID | int         | NO   | PRI | NULL    |       |
| Name        | varchar(50) | NO   |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> Desc Missions;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| MissionID   | int         | NO   | PRI | NULL    |       |
| MissionName | varchar(50) | NO   | UNI | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> DROP TABLE Experiments;
Query OK, 0 rows affected (0.08 sec)

mysql> DROP TABLE Satellites;
Query OK, 0 rows affected (0.07 sec)
```