General

```
MySQL 8.0 Command Line Client                    [_] [□] [X]

mysql> describe droneunits;
+------------------+-------------+------+-----+---------+-------+
| Field            | Type        | Null | Key | Default | Extra |
+------------------+-------------+------+-----+---------+-------+
| UnitID           | varchar(20) | NO   | PRI | NULL    |       |
| DroneModel       | varchar(20) | YES  | MUL | NULL    |       |
| DronesAssigned   | int         | YES  |     | NULL    |       |
| DronesOperational| int         | YES  |     | NULL    |       |
| DronesReady      | int         | YES  |     | NULL    |       |
| AirfieldAssigned | varchar(20) | YES  | MUL | NULL    |       |
+------------------+-------------+------+-----+---------+-------+
6 rows in set (0.45 sec)

mysql> describe dronetypes;
+-------------+---------------+------+-----+---------+-------+
| Field       | Type          | Null | Key | Default | Extra |
+-------------+---------------+------+-----+---------+-------+
| TypeID      | varchar(20)   | NO   | PRI | NULL    |       |
| DModel      | varchar(20)   | YES  | UNI | NULL    |       |
| DRange      | int           | YES  |     | NULL    |       |
| DSpeed      | int           | YES  |     | NULL    |       |
| DCapacity   | int           | YES  |     | NULL    |       |
| MissionCost | decimal(10,2) | YES  |     | NULL    |       |
+-------------+---------------+------+-----+---------+-------+
6 rows in set (0.00 sec)

mysql> describe airfields;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| AFID        | varchar(20) | NO   | PRI | NULL    |       |
| AF_Location | varchar(10) | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> describe activefires;
+---------------+--------------------+------+-----+---------+-------+
| Field         | Type               | Null | Key | Default | Extra |
+---------------+--------------------+------+-----+---------+-------+
| FireID        | varchar(20)        | NO   | PRI | NULL    |       |
| Fire_Category | enum('A','B','C','D')| YES|     | NULL    |       |
| Fire_Location | varchar(20)        | YES  |     | NULL    |       |
+---------------+--------------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```
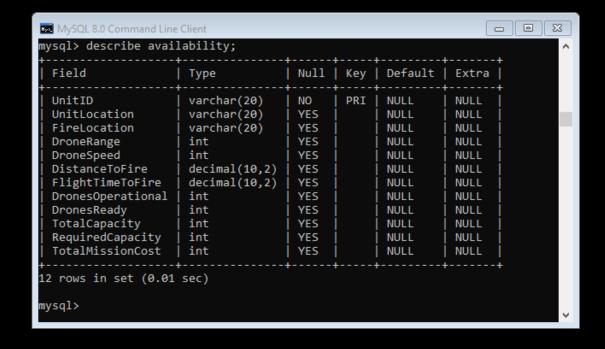
Task

Create the stored procedure showAvailableUnits which accepts a single Active Fire ID and creates the temporary table availability that contains information about the Drone Units that can respond to the fire.


```
MySQL 8.0 Command Line Client                          □  ▣  ⊠
mysql> describe availability;
+------------------+---------------+------+-----+---------+-------+
| Field            | Type          | Null | Key | Default | Extra |
+------------------+---------------+------+-----+---------+-------+
| UnitID           | varchar(20)   | NO   | PRI | NULL    | NULL  |
| UnitLocation     | varchar(20)   | YES  |     | NULL    | NULL  |
| FireLocation     | varchar(20)   | YES  |     | NULL    | NULL  |
| DroneRange       | int           | YES  |     | NULL    | NULL  |
| DroneSpeed       | int           | YES  |     | NULL    | NULL  |
| DistanceToFire   | decimal(10,2) | YES  |     | NULL    | NULL  |
| FlightTimeToFire | decimal(10,2) | YES  |     | NULL    | NULL  |
| DronesOperational| int           | YES  |     | NULL    | NULL  |
| DronesReady      | int           | YES  |     | NULL    | NULL  |
| TotalCapacity    | int           | YES  |     | NULL    | NULL  |
| RequiredCapacity | int           | YES  |     | NULL    | NULL  |
| TotalMissionCost | int           | YES  |     | NULL    | NULL  |
+------------------+---------------+------+-----+---------+-------+
12 rows in set (0.01 sec)

mysql>
```

A Drone can respond to a fire if the distance to the fire is within the Drone's range.

Only Drones that are READY can respond to a fire.

The Total Capacity of a Drone Unit is the number of READY Drones x Capacity of the Drone.

The Required Capacity of a Fire is categorized as:
- **A** 400,000
- **B** 600,000
- **C** 800,000
- **D** 900,000

Expected Output

```
CALL showAvailableUnits('F2-12-1');
CALL showAvailableUnits('F2-8-11');
```

MySQL 8.0 Command Line Client

```
+---------+--------------+--------------+-----------+------------+---------------+----------------+------------------+-------------+---------------+------------------+------------------+
| UnitID  | UnitLocation | FireLocation | DroneRange | DroneSpeed | DistanceToFire | FlightTimeToFire | DronesOperational | DronesReady | TotalCapacity | RequiredCapacity | TotalMissionCost |
+---------+--------------+--------------+-----------+------------+---------------+----------------+------------------+-------------+---------------+------------------+------------------+
| DU-016  | 70:87        | 804:783      |      1200 |         80 |       1023.29 |          12.79 |                8 |           8 |          7200 |           800000 |            88000 |
| DU-017  | 51:7         | 804:783      |      1200 |         80 |       1050.16 |          13.13 |               16 |           8 |          7200 |           800000 |            88000 |
| DU-018  | 9:60         | 804:783      |      1200 |         80 |       1109.55 |          13.87 |               16 |           7 |          6300 |           800000 |            77000 |
| DU-019  | 7:87         | 804:783      |      1200 |         80 |       1112.38 |          13.90 |               12 |           9 |          8100 |           800000 |            99000 |
| DU-020  | 7:87         | 804:783      |      1200 |         80 |       1112.38 |          13.90 |               12 |          12 |         10800 |           800000 |           132000 |
+---------+--------------+--------------+-----------+------------+---------------+----------------+------------------+-------------+---------------+------------------+------------------+
5 rows in set (0.01 sec)

Query OK, 0 rows affected (0.02 sec)

+---------+--------------+--------------+-----------+------------+---------------+----------------+------------------+-------------+---------------+------------------+------------------+
| UnitID  | UnitLocation | FireLocation | DroneRange | DroneSpeed | DistanceToFire | FlightTimeToFire | DronesOperational | DronesReady | TotalCapacity | RequiredCapacity | TotalMissionCost |
+---------+--------------+--------------+-----------+------------+---------------+----------------+------------------+-------------+---------------+------------------+------------------+
| DU-006  | 87:155       | 238:388      |       800 |        120 |        336.75 |           2.81 |                8 |           8 |          1600 |           400000 |            58400 |
| DU-007  | 56:119       | 238:388      |       800 |        120 |        378.61 |           3.16 |                8 |           8 |          1600 |           400000 |            58400 |
| DU-008  | 196:86       | 238:388      |       800 |        120 |        196.54 |           1.64 |                7 |           7 |          1400 |           400000 |            51100 |
| DU-009  | 39:149       | 238:388      |       800 |        120 |        401.75 |           3.35 |               12 |           9 |          1800 |           400000 |            65700 |
| DU-010  | 7:87         | 238:388      |       800 |        120 |        445.56 |           3.71 |               12 |           4 |           800 |           400000 |            29200 |
| DU-011  | 7:87         | 238:388      |       700 |         90 |        445.56 |           4.95 |                8 |           8 |          4000 |           400000 |            74000 |
| DU-012  | 7:87         | 238:388      |       700 |         90 |        445.56 |           4.95 |                8 |           8 |          4000 |           400000 |            74000 |
| DU-013  | 7:87         | 238:388      |       700 |         90 |        445.56 |           4.95 |                7 |           7 |          3500 |           400000 |            64750 |
| DU-014  | 7:87         | 238:388      |       700 |         90 |        445.56 |           4.95 |                4 |           4 |          2000 |           400000 |            37000 |
| DU-015  | 7:87         | 238:388      |       700 |         90 |        445.56 |           4.95 |                8 |           3 |          1500 |           400000 |            27750 |
| DU-016  | 70:87        | 238:388      |      1200 |         80 |        359.65 |           4.50 |                8 |           8 |          7200 |           400000 |            88000 |
| DU-017  | 51:7         | 238:388      |      1200 |         80 |        385.41 |           4.82 |               16 |           8 |          7200 |           400000 |            88000 |
| DU-018  | 9:60         | 238:388      |      1200 |         80 |        442.81 |           5.54 |               16 |           7 |          6300 |           400000 |            77000 |
| DU-019  | 7:87         | 238:388      |      1200 |         80 |        445.56 |           5.57 |               12 |           9 |          8100 |           400000 |            99000 |
| DU-020  | 7:87         | 238:388      |      1200 |         80 |        445.56 |           5.57 |               12 |          12 |         10800 |           400000 |           132000 |
+---------+--------------+--------------+-----------+------------+---------------+----------------+------------------+-------------+---------------+------------------+------------------+
15 rows in set (0.00 sec)

Query OK, 0 rows affected (0.05 sec)

mysql>
```