Asmita Porwal Batch-1 Day-4 22/1/2023 Data engineering

1.EXCEPT

In sql we have EXCEPT but in mysql we don't have but we can use it this way

```
mysql> SELECT *
   -> FROM animals a
   -> WHERE EXISTS (
          SELECT 1
          FROM shelters s
          WHERE s.id = a.shelter
            AND s.location = 'Red City'
 animal_id | name
                                                       | gender | status | species | shelter |
                        breed
                                     color
             Bellyflop
                          Beagle
                                       Brown
                                                         Male
                                                                           Dog
                          Husky
                                                         Female
                                                                           Dog
             Snowy
                                       Brown
                         Pomeranian |
                                                                       0
             Princess
                                       Brown
                                                         Female
                                                                           Dog
             Cricket
                          Chihuahua
                                       Brown
                                                         Male
                                                                           Dog
             Princess
                          Poodle
                                                         Female
                                                                       0
                                                                           Dog
                                       Brown
                                       Black and White
                          Dalmation
                                                                           Dog
             Spot
                                                         Male
                                                                       0
                         Munchkin
             Meowmix
                                       Yellow
                                                         Female
                                                                       0
                                                                           Cat
             Ash
                          Persian
                                       Gray
                                                         Female
                                                                           Cat
             Tiger
                          Bengal
                                       Brown
                                                         Male
                                                                           Cat
 rows in set (0.02 sec)
```

2.MERGE

We don't have merge in mysql but we can do it this way

```
mysql> REPLACE INTO animals (animal_id, name, breed, color, gender, status, species, shelter)
    -> VALUES (11, 'Rush', 'Bengal', 'White', 'Male', 0, 'Dog', 3);
Query OK, 1 row affected (0.05 sec)
mysql> select * from animals;
  animal_id
                 name
                               breed
                                                    color
                                                                          gender
                                                                                      status
                                                                                                 species
                                                                                                             shelter
            1
                 Bellyflop
                               Beagle
                                                    Brown
                                                                           Male
                                                                                            0
                                                                                                 Dog
                                                                           Female
                 Snowy
                               Husky
                                                    Brown
                                                                                                 Dog
                 Princess
                               Pomeranian
                                                    Brown
                                                                           Female
                                                                                           0
                                                                                                 Dog
                                                                                                                    1
            4
                                                                          Male
                 Cricket
                               Chihuahua
                                                                                           0
                                                    Brown
                                                                                                 Dog
            5
                 Princess
                                                                           Female
                                                                                                                    1
                               Poodle
                                                    Brown
                                                                                            0
                                                                                                 Dog
            6
                 Spot
                               Dalmation
                                                    Black and White
                                                                          Male
                                                                                            0
                                                                                                 Dog
                 Meowmix
                               Munchkin
                                                                                           0
                                                    Yellow
                                                                           Female
                                                                                                 Cat
            8
                 Ash
                               Persian
                                                    Gray
                                                                           Female
                                                                                            0
                                                                                                 Cat
                                                                                                                    1
            9
                 Tiger
                                                                          Male
                                                                                            0
                                                                                                 Cat
                               Bengal
                                                    Brown
           10
                 Snoops
                               Beagle
                                                    Brown
                                                                          Male
                                                                                            0
                                                                                                 Dog
                                                                                                                    2
                                                                                                                    2
           11
                               Turkish Angora
                                                    White
                                                                           Female
                 Salt
                                                                                            0
                                                                                                 Cat
           11
                 Rush
                                                                                                                    3
                               Bengal
                                                    White
                                                                           Male
                                                                                            0
                                                                                                Dog
12 rows in set (0.01 sec)
mysql>
```

3.correlated subquery

```
mysql> SELECT
           animal_id,
           name,
breed,
    ->
           color,
           gender,
           status,
           species,
    ->
           shelter
    ->
           animals a
       WHERE
           EXISTS (
    ->
               SELECT 1
    ->
                FROM shelters s
    ->
               WHERE s.id = a.shelter
                  AND s.location = 'Red City'
  animal_id | name
                           breed
                                         color
                                                           gender
                                                                               species |
                                                                                          shelter |
                                                                      status |
              Bellyflop
                           Beagle
                                         Brown
                                                            Male
                                                                               Dog
              Snowy
                           Husky
                                         Brown
                                                            Female
                                                                               Dog
              Princess
                           Pomeranian
                                         Brown
                                                            Female
                                                                           0
                                                                                Dog
                           Chihuahua
          4
              Cricket
                                         Brown
                                                            Male
                                                                           0
                                                                                Dog
              Princess
                           Poodle
                                         Brown
                                                            Female
                                                                           0
                                                                                Dog
                                                                                                 1
                           Dalmation
                                         Black and White
                                                                               Dog
              Spot
                                                            Male
                                                                           0
                           Munchkin
              Meowmix
                                         Yellow
                                                            Female
                                                                           0
                                                                               Cat
              Ash
                           Persian
                                         Gray
                                                            Female
                                                                           0
                                                                               Cat
          9
                                                                                                1 |
              Tiger
                           Bengal
                                         Brown
                                                            Male
                                                                           0 I
                                                                               Cat
 rows in set (0.00 sec)
```

4. Nested Subqueries

```
mysql> SELECT * FROM animals a WHERE a.shelter IN (
               SELECT s.id
               FROM shelters s
               WHERE s.location = (
                   SELECT location
    ->
                   FROM shelters
    ->
                   WHERE name = 'Adopt A Buddy'
    ->
               )
 animal_id |
                       breed
                                         color
                                                 gender
                                                          status
                                                                    species
                                                                              shelter
              name
                                                                    Dog
         10
              Snoops
                       Beagle
                                         Brown
                                                 Male
                                                                0
                                                                                    2
         11
              Salt
                       Turkish Angora
                                         White
                                                 Female
                                                                0
                                                                    Cat
                                                                                    2 |
2 rows in set (0.01 sec)
```

5.EXISTS

```
mysql> SELECT
   -> FROM
           animals a
   -> WHERE
           EXISTS (
               SELECT 1
               FROM animals b
               WHERE b.species = a.species
                 AND b.animal_id != a.animal_id
                 AND b.shelter = a.shelter
    ->
 animal_id |
                                       color
                                                                   status |
                                                                            species
                                                                                       shelter |
             name
                         breed
                                                          gender |
              Bellyflop
                          Beagle
                                                          Male
                                        Brown
                                                                             Dog
              Snowy
                          Husky
                                        Brown
                                                          Female
                                                                             Dog
              Princess
                           Pomeranian
                                                                         0
                                        Brown
                                                          Female
                                                                             Dog
              Cricket
                                                                             Dog
          4
                           Chihuahua
                                        Brown
                                                                         0
                                                          Male
              Princess
                           Poodle
                                                          Female
                                        Brown
                                                                         0
                                                                             Dog
                                        Black and White
          6
              Spot
                           Dalmation
                                                          Male
                                                                         0
                                                                             Dog
              Meowmix
                           Munchkin
                                        Yellow
                                                          Female
                                                                         0
                                                                             Cat
          8
                          Persian
                                        Gray
                                                                         0
                                                                                              1
              Ash
                                                           Female
                                                                             Cat
              Tiger
                          Bengal
                                        Brown
                                                          Male
                                                                         0
                                                                             Cat
9 rows in set (0.00 sec)
```

6.ALL

```
mysql> SELECT
    -> FROM
           animals a
   ->
    -> WHERE
           status = 0
    ->
           AND species = ALL (
    ->
               SELECT species
               FROM animals b
    ->
    ->
               WHERE b.shelter = a.shelter
                                                                   shelter
 animal_id | name | breed
                              color
                                    gender
                                               status |
                                                         species
         11 |
                     Bengal
                              White
                                                     0 |
                                                         Dog
                                                                          3
             Rush
                                      Male
1 row in set (0.00 sec)
```

7.ANY

```
mysql> SELECT
    -> FROM
           animals a
    -> WHERE
           breed = ANY (
               SELECT breed
               FROM animals b
               WHERE b.shelter = a.shelter
    ->
 animal_id | name
                          breed
                                             color
                                                                gender |
                                                                         status | species | shelter |
              Bellyflop
                                             Brown
                                                                Male
                           Beagle
                                                                               0
                                                                                   Dog
              Snowy
                           Husky
                                             Brown
                                                                Female
                                                                                   Dog
          3
              Princess
                           Pomeranian
                                             Brown
                                                                Female
                                                                               0
                                                                                   Dog
                                                                                                    1
          4
              Cricket
                           Chihuahua
                                             Brown
                                                                Male
                                                                               0
                                                                                   Dog
          5
              Princess
                                                                Female
                                                                               0
                                                                                   Dog
                           Poodle
                                             Brown
                           Dalmation
                                             Black and White
              Spot
                                                                Male
                                                                               0
                                                                                   Dog
              .
Meowmix
                           Munchkin
                                                                                                    1
                                             Yellow
                                                                Female
                                                                                   Cat
                                                                               0
          8
              Ash
                           Persian
                                             Gray
                                                                Female
                                                                               0
                                                                                   Cat
                                                                                                    1
2
          9
              Tiger
                                                                Male
                                                                               0
                           Bengal
                                             Brown
                                                                                   Cat
         10
              Snoops
                           Beagle
                                             Brown
                                                                Male
                                                                               0
                                                                                   Dog
                           Turkish Angora
              Salt
         11
                                             White
                                                                Female
                                                                                   Cat
                                                                               0
         11
              Rush
                           Bengal
                                             White
                                                                Male
                                                                                   Dog
12 rows in set (0.00 sec)
```

8. Subqueries

```
mysql> SELECT
    -> FROM
           animals
      WHERE
           shelter IN (
               SELECT id
    ->
               FROM shelters
               WHERE location = 'Red City'
   ->
 animal_id
                          breed
                                      color
                                                          gender | status |
                                                                             species |
                                                                                        shelter
              name
              Bellyflop
                          Beagle
                                        Brown
                                                           Male
              Snowy
                          Husky
                                        Brown
                                                           Female
                                                                         1
                                                                             Dog
              Princess
                          Pomeranian
                                        Brown
                                                           Female
                                                                         0
                                                                             Dog
          4
                          Chihuahua
                                                                         0
              Cricket
                                                           Male
                                        Brown
                                                                             Dog
              Princess
                          Poodle
                                        Brown
                                                           Female
                                                                         0
                                                                             Dog
                          Dalmation
                                        Black and White
                                                           Male
                                                                         0
              Spot
                                                                             Dog
          7
              Meowmix
                          Munchkin
                                        Yellow
                                                           Female
                                                                         0
                                                                             Cat
          8
              Ash
                          Persian
                                        Gray
                                                           Female
                                                                             Cat
                                                                                              1
          9
              Tiger
                          Bengal
                                        Brown
                                                           Male
                                                                         0
                                                                             Cat
9 rows in set (0.00 sec)
```

9. Joins with groupby, having by, grouping sets

```
mysql> SELECT
           a.shelter,
           a.species,
COUNT(*) AS total_animals,
           AVG(a.status) AS avg_status
    -> FROM
           animals a
    -> JOIN
           shelters s ON a.shelter = s.id
    -> GROUP BY
           a.shelter, a.species
    -> HAVING
           COUNT(*) > 1 OR AVG(a.status) > 0;
 shelter |
            species | total_animals | avg_status
            Dog
                                    6
                                            0.1667
        1 l
        1 |
            Cat
                                    3
                                             0.0000
2 rows in set (0.01 sec)
```

10. Joins with groupby, aggregate functions

```
mysql> SELECT
    ->
            s.id AS shelter_id,
           s.name AS shelter_name,
    ->
           COUNT(*) AS total_animals,
    ->
    ->
           AVG(a.status) AS avg_status,
    ->
           a.species
    -> FROM
           shelters s
    ->
    -> JOIN
    ->
           animals a ON s.id = a.shelter
    -> GROUP BY
           s.id, s.name, a.species;
    ->
  shelter_id |
                                  total_animals | avg_status |
                                                                  species
               shelter_name
           1
                Animals 4 Homes
                                                6
                                                        0.1667
                                                                  Dog
           1
                Animals 4 Homes
                                                3
                                                        0.0000
                                                                  Cat
           2
                Adopt A Buddy
                                                1
                                                        0.0000
                                                                  Dog
           2
                Adopt A Buddy
                                                1
                                                        0.0000
                                                                  Cat
                Fluffy Animals
           3
                                                1
                                                        0.0000
                                                                  Dog
5 rows in set (0.00 sec)
```

11.CROSS JOIN

```
mysql> SELECT
            a.animal_id,
a.name AS animal_name,
             a.breed,
    ->
             a.color,
            a.gender,
a.status,
             a.species,
             s.id AS shelter_id,
s.name AS shelter_name
    ->
    -> FROM
            animals a
    -> CROSS JOIN
             shelters s;
 animal_id | animal_name | breed
                                                       color
                                                                              gender | status | species | shelter_id | shelter_name
                 Bellyflop
                                                                                                                                  Fluffy Animals
                                  Beagle
                                                                                                                                  Adopt A Buddy
Animals 4 Homes
Fluffy Animals
Adopt A Buddy
Animals 4 Homes
                Bellyflop
Bellyflop
                                   Beagle
                                                        Brown
                                                                               Male
                                                                                                     Dog
                                                                               Male
                                  Beagle
                                                        Brown
                                                                                                     Dog
                 Snowy
                                  Husky
                                                        Brown
                                                                               Female
                                                                                                     Dog
                 Snowy
                                   Husky
                                                                               Female
                                                                                                     Dog
                                                        Brown
                 Snowy
                                   Husky
                                                        Brown
                                                                               Female
                                                                                                      Dog
                                                                                                                                  Fluffy Animals
Adopt A Buddy
Animals 4 Homes
                 Princess
                                   Pomeranian
                                                        Brown
                                                                               Female
                                                                                                     Dog
                 Princess
                                  Pomeranian
                                                        Brown
                                                                               Female
                                                                                                0
                                                                                                     Dog
                                  Pomeranian
                                                                               Female
                                                                                                0
                 Princess
                                                        Brown
                                                                                                     Dog
                                                                                                                                  Fluffy Animals
Adopt A Buddy
                                  Chihuahua
                                                        Brown
                                                                               Male
                                                                                                     Dog
                 Cricket
                 Cricket
                                   Chihuahua
                                                                               Male
                                                        Brown
                 Cricket
                                   Chihuahua
                                                                                                                                  Animals 4 Home
```

12.BETWEEN

```
mysql> SELECT
           animals
    -> WHERE
           animal_id BETWEEN 1 AND 3;
                                                                    species |
  animal_id |
                           breed
                                         color
                                                 gender
                                                          status |
                                                                              shelter
              name
          1
              Bellyflop
                           Beagle
                                         Brown
                                                 Male
                                                                0
                                                                    Dog
                                                                                     1
                                                                                     1
          2
              Snowy
                           Husky
                                         Brown
                                                 Female
                                                                1
                                                                    Dog
          3
              Princess
                                                                0
                           Pomeranian
                                         Brown
                                                 Female
                                                                    Dog
3 rows in set (0.00 sec)
```

13. Using Functions to Customize the Result Set

```
mysql> SELECT
           animal_id,
    ->
           name,
breed,
           UPPER(color) AS uppercase_color,
           gender,
           status,
           species,
           shelter
    -> FROM
           animals;
                         breed
 animal_id |
              name
                                             uppercase_color |
                                                               gender | status | species |
                                                                                             shelter |
              Bellyflop
                                             BROWN
                                                                Male
                                                                              0
          1
                           Beagle
                                                                                   Dog
                                             BROWN
                                                                Female
              Snowy
                           Husky
                                                                                   Dog
                                                                                   Dog
              Princess
                           Pomeranian
                                             BROWN
                                                                Female
                                                                              0
                           Chihuahua
                                             BROWN
          4
              Cricket
                                                                Male
                                                                                   Dog
                                                                                                    1
              Princess
                           Poodle
                                             BROWN
                                                                Female
                                                                                   Dog
                                                                                   Dog
                                             BLACK AND WHITE
                                                                              0
          6
              Spot
                           Dalmation
                                                                Male
                                                                Female
              Meowmix
                           Munchkin
                                             YELLOW
                                                                                   Cat
              Ash
                           Persian
                                             GRAY
                                                                Female
                                                                               0
                                                                                   Cat
                                             BROWN
                                                                              0
          9
              Tiger
                           Bengal
                                                                Male
                                                                                   Cat
                                             BROWN
         10
              Snoops
                           Beagle
                                                                Male
                                                                                   Dog
              Salt
                           Turkish Angora
                                             WHITE
                                                                                   Cat
                                                                                                    2
         11
                                                                Female
                                                                              0
         11
              Rush
                                             WHITE
                                                                Male
                                                                                                    3 |
                           Bengal
                                                                                   Dog
12 rows in set (0.00 sec)
```

14.Using String Functions

```
ysql> SELECT
           CONCAT(a.name, 'the ', a.species) AS animal_description,
           a.breed,
    ->
           a.color,
           a.gender,
           a.status,
           a.shelter
           UPPER(s.location) AS uppercase_location
    ->
    -> FROM
    ->
           animals a
    -> JOIN
           shelters s ON a.shelter = s.id;
 animal_description | breed
                                         color
                                                           | gender | status
                                                                              | shelter | uppercase_location |
  Bellyflop the Dog
                        Beagle
                                          Brown
                                                             Male
                                                                                          RED CITY
 Snowy the Dog
Princess the Dog
                        Husky
                                         Brown
                                                             Female
                                                                                          RED CITY
                                                                            1
                       Pomeranian
                                                             Female
                                                                                          RED CITY
                                         Brown
                                                                            0
                                                             Male
                        Chihuahua
                                                                           0
                                                                                          RED CITY
 Cricket the Dog
                                         Brown
                                                             Female
 Princess the Dog
                        Poodle
                                         Brown
                                                                            0
                                                                                          RED CITY
  Spot the Dog
                        Dalmation
                                         Black and White
                                                             Male
                                                                            0
                                                                                          RED CITY
 Meowmix the Cat
                        Munchkin
                                          Yellow
                                                             Female
                                                                            0
                                                                                          RED CITY
 Ash the Cat
                       Persian
                                         Gray
                                                                                          RED CITY
                                                             Female
                                                                            0
  Tiger the Cat
                       Bengal
                                         Brown
                                                            Male
                                                                            0
                                                                                      1
                                                                                          RED CITY
 Snoops the Dog
                        Beagle
                                         Brown
                                                            Male
                                                                            0
                                                                                          GREEN TOWN
  Salt the Cat
                        Turkish Angora
                                         White
                                                             Female
                                                                            0
                                                                                          GREEN TOWN
 Rush the Dog
                       Bengal
                                         White
                                                             Male
                                                                            0
                                                                                          BLUE HILLS
12 rows in set (0.00 sec)
```

15. Using String Functions

```
ysql> SELECT
          CONCAT(a.name, ' the ', a.species) AS animal_description,
   ->
          a.breed,
          a.color,
          a.gender,
          a.status,
   ->
          a.shelter.
          UPPER(s.location) AS uppercase_location
   ->
   -> FROM
          animals a
   -> JOIN
          shelters s ON a.shelter = s.id;
 animal_description | breed
                                        color
                                                          gender
                                                                    status
                                                                             shelter | uppercase_location |
 Bellyflop the Dog
                       Beagle
                                        Brown
                                                           Male
                                                                          0
                                                                                        RED CITY
 Snowy the Dog
                      Husky
                                        Brown
                                                           Female
                                                                                        RED CITY
 Princess the Dog
                      Pomeranian
                                                           Female
                                                                         0
                                        Brown
                                                                                        RED CITY
 Cricket the Dog
                      Chihuahua
                                        Brown
                                                           Male
                                                                          0
                                                                                        RED CITY
                                        Brown
 Princess the Dog
                       Poodle
                                                           Female
                                                                          0
                                                                                        RED CITY
 Spot the Dog
                       Dalmation
                                        Black and White
                                                           Male
                                                                          0
                                                                                        RED CITY
 Meowmix the Cat
                      Munchkin
                                        Yellow
                                                           Female
                                                                                        RED CITY
                                                                          0
 Ash the Cat
                      Persian
                                                                          0
                                        Gray
                                                           Female
                                                                                        RED CITY
 Tiger the Cat
                      Bengal
                                        Brown
                                                           Male
                                                                          0
                                                                                    1
                                                                                        RED CITY
 Snoops the Dog
                       Beagle
                                        Brown
                                                           Male
                                                                          0
                                                                                        GREEN TOWN
 Salt the Cat
                       Turkish Angora
                                                                                        GREEN TOWN
                                        White
                                                           Female
                                                                          0
 Rush the Dog
                      Bengal
                                        White
                                                           Male
                                                                                        BLUE HILLS
2 rows in set (0.00 sec)
```

16.Using Date Functions

```
a.animal_id,
a.name,
a.breed,
a.color,
a.gender,
a.status,
                           a.species,
a.shelter,
s.id AS shelter_id,
s.name AS shelter_name,
NOW() AS operating_days
                            shelters s ON a.shelter = s.id;
animal_id | name
                                                                                                                                                                                      gender | status | species | shelter | shelter_id | shelter_name
                                                                                                                             color
                                                                   breed
                                                                                                                                                                                                                                                                                                                                                                                                              | operating_days
                              Bellyflop
Snowy
Princess
Cricket
Princess
Spot
Meowmix
Ash
Tiger
Snoops
Salt
Rush
                                                                                                                                                                                                                                    0 | Dog
1 | Dog
0 | Dog
0 | Dog
0 | Dog
0 | Cat
0 | Cat
0 | Cat
0 | Cat
0 | Dog
0 | Cat
                                                                                                                                                                                                                                                                                                                                                         Animals 4 Homes
Animals 4 Homes
                                                                          Husky
Pomeranian
Chihuahua
Poodle
Dalmation
Munchkin
Persian
Rengal
                                                                                                                                Brown
Brown
Brown
                                                                                                                                                                                       Female
Female
Male
Female
Female
Female
Male
Male
Male
Female
                                                                                                                                                                                                                                                                                                                                            1 Animals 4 Homes
2 Animals 4 Homes
2 Adopt A Buddy
2 Adopt A Buddy
3 Fluffy Animals
                                                                                                                                                                                                                                                                                                                                                                                                                 2024-01-22 20:06:59
2024-01-22 20:06:59
2024-01-22 20:06:59
2024-01-22 20:06:59
2024-01-22 20:06:59
2024-01-22 20:06:59
                                                                                                                               Brown
Black and White
Yellow
Gray
Brown
Brown
White
White
                                                                          Bengal
Beagle
Turkish Angora
Bengal
                                                                                                                                                                                                                                                                                                                                                                                                            2024-01-22 20:06:59
2024-01-22 20:06:59
2024-01-22 20:06:59
2024-01-22 20:06:59
                       10
11
11
   rows in set (0.01 sec)
```

17. Using Mathematical Functions

18.Using System Functions

```
a.animal_id,
            a.name,
a.breed,
            a.color,
            a.gender,
            a.status
            a.species,
            a.shelter,
            NOW() AS current_datetime
            animals a;
 animal_id | name
                            breed
                                                 color
                                                                        gender | status | species | shelter | current_datetime
                Bellyflop
                                                                                                                     2024-01-22 20:17:28
                                                  Brown
                                                                        Male
                                                                                                                     2024-01-22 20:17:28
               Snowy
Princess
                                                                        Female
                              Husky
                                                  Brown
                                                                                             Dog
                                                                                                                     2024-01-22 20:17:28
2024-01-22 20:17:28
2024-01-22 20:17:28
                                                                                         0 |
                              Pomeranian
                                                  Brown
                                                                        Female
                                                                                             Dog
               Cricket
                              Chihuahua
                                                                        Male
                                                                                         ō |
                                                                                             Dog
Dog
Dog
                                                  Brown
               Princess
                                                                        Female
                                                                                         0 |
                              Poodle
                                                  Brown
                Spot
                              Dalmation
                                                  Black and White
                                                                        Male
                                                                                                                     2024-01-22 20:17:28
                                                                                                                     2024-01-22 20:17:28
2024-01-22 20:17:28
                Meowmix
                              Munchkin
                                                   Yellow
                                                                        Female
                                                                                             Cat
                              Persian
                                                   Gray
                                                                        Female
                                                                                             Cat
                                                                                                                     2024-01-22 20:17:28
2024-01-22 20:17:28
                Tiger
                              Bengal
                                                  Brown
                                                                        Male
                                                                                             Cat
                                                                        Male
                Snoops
                              Beagle
                                                  Brown
                                                                                         0
                                                                                             Dog
                                                                                                                     2024-01-22 20:17:28
2024-01-22 20:17:28
          11 |
11 |
                Salt
                              Turkish Angora
                                                  White
                                                                        Female
                                                                                         0
                                                                                             Cat
                                                                        Male
                                                                                         Θĺ
               Rush
                              Bengal
                                                  White
                                                                                             Dog
12 rows in set (0.00 sec)
```

19. Date Functions

```
select day ('2023-05-30');
return value of date of that particular day
select month ('2023-05-31');
return month value
select year ('2023-05-3');
return year value
```

20.Mathematical Functions

```
select abs(-101);
returns absolute value

select sin(1.5);
returns angle in radians

select ceiling(14.01);
returns the smallest or greater to the specified value

select exp(4.5);
```

```
returns the exponencial value select floor(14.75); select log(5.4); return logarithmic value
```