**Sly1.Position queries in MYSQL**

**select** **substr**('2022/2023',1,**position**('/' **in** '2022/2023') -1 )

result -> 2022

**select** **substr**('2022/2023',**position**('/' **in** '2022/2023') + 1)

result -> 2023

**2. Table structure in MYSQL**

**CREATE** **TABLE** `active\_area` (

`id` **bigint**(20) **NOT** **NULL** **AUTO\_INCREMENT**,

`gang\_id` **int**(11) **DEFAULT** **NULL**,

`active\_area` **varchar**(360) **DEFAULT** **NULL**,

`created\_by` **int**(11) **DEFAULT** '1',

`creation\_date` **timestamp** **NULL** **DEFAULT** **CURRENT\_TIMESTAMP**,

`last\_update\_by` **int**(11) **DEFAULT** '1',

`last\_update\_date` **timestamp** **NULL** **DEFAULT** **CURRENT\_TIMESTAMP** **ON** **UPDATE** **CURRENT\_TIMESTAMP**,

`last\_update\_login` **int**(11) **DEFAULT** '1',

**PRIMARY** **KEY** (`id`)

) **ENGINE**=InnoDB **AUTO\_INCREMENT**=173 **DEFAULT** CHARSET=latin1;

**3.TO CALCULATE LAT and LONG distance in MYSQL**

**create** **function** lat\_long\_distance\_diff()

**RETURNS** **DECIMAL**(10, 3)

**BEGIN**

**DECLARE** R **DECIMAL**(10, 5);

**DECLARE** dLat **DECIMAL**(10, 8);

**DECLARE** dLon **DECIMAL**(11, 8);

**DECLARE** dLat\_diff\_first **DECIMAL**(10, 8);

**DECLARE** dLon\_diff\_first **DECIMAL**(11, 8);

**DECLARE** dLat\_diff\_last **DECIMAL**(10, 8);

**DECLARE** dLon\_diff\_last **DECIMAL**(11, 8);

**DECLARE** dLat\_diff\_bw\_first\_and\_last **DECIMAL**(10, 8);

**DECLARE** dLon\_diff\_bw\_first\_and\_last **DECIMAL**(11, 8);

**DECLARE** def\_dist\_first **DECIMAL**(20, 5);

**DECLARE** def\_dist\_last **DECIMAL**(10, 5);

**DECLARE** def\_dist\_bw\_first\_last **DECIMAL**(10, 5);

**DECLARE** done **BOOLEAN** **DEFAULT** **FALSE**;

**DECLARE** cur\_lat1 **DECIMAL**(10, 8);

**DECLARE** cur\_lon1 **DECIMAL**(11, 8);

**DECLARE** cur\_lat2 **DECIMAL**(10, 8);

**DECLARE** cur\_lon2 **DECIMAL**(11, 8);

**DECLARE** cur\_def\_lat **DECIMAL**(10, 8);

**DECLARE** cur\_def\_lon **DECIMAL**(11, 8);

**DECLARE** cur\_last\_ud **timestamp**;

**DECLARE** cur\_id **INT**;

**DECLARE** lat\_long **CURSOR** **FOR**

**SELECT** **CASE**

**when** (FirstCGILatLong = '' **or** FirstCGILatLong **is** **null**) **then** **null**

**else** **SUBSTRING\_INDEX**(FirstCGILatLong, '/', 1)

**end** **AS** lat1,

**CASE**

**when** (FirstCGILatLong = '' **or** FirstCGILatLong **is** **null**) **then** **null**

**else** **SUBSTRING\_INDEX**(FirstCGILatLong, '/', -1)

**END** **AS** long1,

**CASE**

**when** (LastCGILatLong = '' **or** LastCGILatLong **is** **null**) **then** **null**

**else** **SUBSTRING\_INDEX**(LastCGILatLong, '/', 1)

**end** **AS** lat2,

**CASE**

**when** (LastCGILatLong = '' **or** LastCGILatLong **is** **null**) **then** **null**

**else** **SUBSTRING\_INDEX**(LastCGILatLong, '/', -1)

**END** **AS** long2,

28.365502 **AS** def\_lat,

77.096563 **AS** def\_long,

last\_update\_date,

id

**FROM** `gurgaon-police-sm-tracking-db`.airtel\_call\_detail

**WHERE** **DATE**(last\_update\_date) = **CURRENT\_DATE**();

-- Declare continue handler for cursor

**DECLARE** **CONTINUE** HANDLER **FOR** **NOT** **FOUND** **SET** done = **TRUE**;

**OPEN** lat\_long;

read\_loop: **LOOP**

**FETCH** lat\_long **INTO** cur\_lat1,cur\_lon1,cur\_lat2,cur\_lon2,cur\_def\_lat,cur\_def\_lon , cur\_last\_ud,cur\_id;

**IF** done **THEN**

**LEAVE** read\_loop;

**END** **IF**;

-- SET R = 6371;

**SET** dLat\_diff\_first = **ABS**(cur\_def\_lat - cur\_lat1) \* 111.1;

**SET** dLon\_diff\_first = **ABS**(cur\_def\_lon - cur\_lon1) \* 111.321;

**SET** dLat\_diff\_last = **ABS**(cur\_def\_lat - cur\_lat2) \* 111.1;

**SET** dLon\_diff\_last = **ABS**(cur\_def\_lon - cur\_lon2) \* 111.321;

**SET** dLat\_diff\_bw\_first\_and\_last = **ABS**(cur\_lat1 - cur\_lat2) \* 111.1;

**SET** dLon\_diff\_bw\_first\_and\_last = **ABS**(cur\_lon1 - cur\_lon2) \* 111.321;

**SET** def\_dist\_first = **sqrt**(**POW**(dLat\_diff\_first, 2) + **POW**(dLon\_diff\_first, 2));

**SET** def\_dist\_last = **sqrt**(**POW**(dLat\_diff\_last, 2) + **POW**(dLon\_diff\_last, 2));

**SET** def\_dist\_bw\_first\_last = **sqrt**(**POW**(dLat\_diff\_bw\_first\_and\_last, 2) + **POW**(dLon\_diff\_bw\_first\_and\_last, 2));

-- SET c = SQRT(a);

**UPDATE** `gurgaon-police-sm-tracking-db`.airtel\_call\_detail

**SET** `first\_lat\_distance\_from def\_location` = def\_dist\_first,

`last\_loc\_distance\_from def\_location` = def\_dist\_last,

`last\_loc\_distance\_from\_first\_location` = def\_dist\_bw\_first\_last

**WHERE** id = cur\_id;

**END** **LOOP**;

**CLOSE** lat\_long;

**RETURN** 0;

**END**;

**4. ADDING RWHO columns in MYSQL using alter table**

**alter** **table** airtel\_call\_detail

**add** **column** `created\_by` **int**(11) **DEFAULT** '1',

**add** **column** `creation\_date` **timestamp** **NULL** **DEFAULT** **CURRENT\_TIMESTAMP**,

**add** **column** `last\_update\_by` **int**(11) **DEFAULT** '1',

**add** **column** `last\_update\_date` **timestamp** **NULL** **DEFAULT** **CURRENT\_TIMESTAMP** **ON** **UPDATE** **CURRENT\_TIMESTAMP**,

**add** **column** `last\_update\_login` **int**(11) **DEFAULT** '1'

**5. USING REGEXP and POSITION in MYSQL  
  
 select substr('FORIDA-FCM INJECTION 1\*10ML',1,POSITION('\*' in (TRIM(REGEXP\_REPLACE('FORIDA-FCM INJECTION 1\*10ML', ' [0-9]+\\\*[0-9]+', '\*')))) -1);**

**6.GET FIRST DAY OF MONTH**

**SELECT DATE\_SUB(LAST\_DAY(CURDATE()), INTERVAL DAY(LAST\_DAY(CURDATE())) - 1 DAY) AS first\_day\_of\_month;**

**7.STRING TO DATE**

SELECT STR\_TO\_DATE('23-10-2024', '%d-%m-%Y') AS formatted\_date;

**8.MYSQL RECURSIVE QUERY**

**WITH RECURSIVE category\_hierarchy AS ( SELECT id, name, parent\_id, 1 AS level FROM `MITR-QA`.`CATEGORIES` WHERE parent\_id IS NULL UNION ALL SELECT c.id, c.name, c.parent\_id, ch.level + 1 FROM `MITR-QA`.`CATEGORIES` c INNER JOIN category\_hierarchy ch ON c.parent\_id = ch.id)SELECT \* FROM category\_hierarchy ORDER BY level, id;**