1. List Down The Top 10 Districts That Have the Highest Number of Domestic Visitors Overall (2016 - 2019)

```sql
-- List Down The Top 10 Districts That Have the Highest Number of Domestic Visitors Overall (2016 - 2019)

select distinct(district) as top_10_districts, visitors from domestic_visitors
 where year in (2016,2019)  order by visitors desc limit 10;
-- or
select distinct(district) as top_10_districts, visitors from
(
 SELECT district, year, visitors,
  ROW_NUMBER() OVER (PARTITION BY district ORDER BY visitors DESC) as rn
  FROM domestic_visitors
  WHERE year IN (2016, 2019)
)as t
 where year IN (2016,2019)  order by visitors desc limit 10;

```

2. List down the top 3 districts based on compounded annual growth rate (CAGR) of visitors between (2016 - 2019)

```sql
-- List down the top 3 districts based on compounded annaul growth rate (CAGR) of visitors between (2016 - 2019)

SELECT district as Top_3_districts,
  round(POWER((MAX(visitors) / MIN(visitors)), 1/4.0) - 1,4) as CAGR   -- CAGR (Ending Value / Begining Value)*(1/Number of years)-1
FROM domestic_visitors
WHERE year BETWEEN 2016 AND 2019
GROUP BY district
ORDER BY cagr DESC
 LIMIT 3;

```

3. List down the bottom 3 districts based on compounded annual growth rate (CAGR) of visitors between (2016 - 2019)

```sql
-- List down the bottom  3 districts based on compounded annaul growth rate (CAGR) of visitors between (2016 - 2019)


SELECT district as Top_3_districts,
  round(POWER((MAX(visitors) / MIN(visitors)), 1/4.0) - 1,4) as CAGR   -- CAGR (Ending Value / Begining Value)*(1/Number of years)-1
FROM domestic_visitors
WHERE year BETWEEN 2016 AND 2019
GROUP BY district
ORDER BY cagr ASC
LIMIT 3;
```

4. What are the peak and low season months for Hyderabad based on the data from 2016 - 2019 for Hyderabad district

```sql
--  What are the peak and low season months for hyderabad based on the data from 2016 - 2019 for hyderabad distrcit

select month,max(visitors) as peak, min(visitors) as seasonal  from domestic_visitors
where district = 'hyderabad'
and year between 2016 and 2019
group by month
order by peak desc,seasonal asc limit 3;
```

5. show the Top & Bottom 3 districts with high domestic to foreign tourist ratio?

```sql
-- show the Top & Bottom 3 districts with high domestic to forign tourist ratio?

(SELECT district, visitors/100 AS ratio
FROM domestic_visitors
ORDER BY ratio DESC LIMIT 3)
 UNION (SELECT district, visitors/100 AS ratio
FROM foreign_visitors
ORDER BY ratio ASC
LIMIT 3);
```

6. List the top & bottom 5 districts based on 'population to tourist footfall ratio *' ratio in 2019? (*total visitors / Total residents' population in the given year)

```sql
-- List the top & bottom 5 districts based on 'population to tourist footfall ratio *' ratio in 2019? (*total visitors / Total residents population in the given year)

(select district, round((sum(visitors)/ count(district)),3) as ratio
from domestic_visitors where year = '2019'
group by district
order by district ASC
limit 5)
union
(select district, round((sum(visitors) / count(district)),3) as ratio
from foreign_visitors where year = '2019'
group by district
order by district DESC
limit 5);
```

7. What will be projected number of domestic and foreign tourists in hyderabad 2025 based on growth rate from previous years.

```sql
-- What will be projected number  of domestic and foreign tourists in hyderabad 2025 based on growth rate from previous years
(SELECT sum(visitors) as project_number_2025
FROM (
  SELECT year, visitors, LAG(visitors) OVER (ORDER BY year) AS previous_year_project_number
  FROM domestic_visitors
  WHERE year BETWEEN 2017 AND 2019
) AS subquery
WHERE year = 2019 AND previous_year_project_number IS NOT NULL)
union
(SELECT sum(visitors) as project_number_2025
FROM (
  SELECT year, visitors, LAG(visitors) OVER (ORDER BY year) AS previous_year_project_number
  FROM foreign_visitors
  WHERE year BETWEEN 2017 AND 2019
) AS subquery
WHERE year = 2019 AND previous_year_project_number IS NOT NULL);
```

8. Estimate the Projected Revenue for Hyderabad 2025 based on average spend per tourist.

```sql
-- Estimate the Projected  Revenue for Hyderabad 2025 based on average spend per tourist

create table revenue (
Tourist varchar(50),
Average_Revenue int (50)
);
insert into revenue
values ('Foreign_Tourist' , 5600),
      ('Domestic_Tourist', 1200);
(SELECT projected_visitors * 12500 AS projected_revenue_2025
FROM (
  SELECT total_visitors * POWER(1.05, 6) AS projected_visitors
  FROM (
    SELECT SUM(visitors) AS total_visitors
    FROM domestic_visitors
    where district = 'Hyderabad'
  ) t
) t)
Union
(SELECT projected_visitors * 5600 AS projected_revenue_2025
FROM (
  SELECT total_visitors * POWER(1.05, 6) AS projected_visitors
  FROM (
    SELECT SUM(visitors) AS total_visitors
    FROM domestic_visitors
    where district = 'Hyderabad'
  ) t
) t);
```