MYSQL Queries with output

1. Year-wise Rice Production Trend for Top 3 States

```
SELECT year, state_name, Rice_Production
FROM (
                SELECT year, state_name, SUM(rice_production_1000_tons) AS
Rice_Production,
                RANK() OVER (PARTITION BY year ORDER BY
SUM(rice_production_1000_tons) DESC) AS rnk
      FROM agri_data GROUP BY year, state_name
      ) ranked
WHERE
   rnk <= 3
ORDER BY
   year, Rice_Production DESC;
```

Output:

year	state_name	Rice_Production
1966	West Bengal	4819.400000000001
1966	Tamil Nadu	3793
1966	Orissa	3691.79
1967	West Bengal	4865.7699999999995
1967	Tamil Nadu	3848
1967	Orissa	3755.4700000000003
1968	West Bengal	5461.490000000001
1968	Orissa	3951.560000000001
1968	Tamil Nadu	3549
1969	West Bengal	5362.82
1969	Tamil Nadu	4011.9
1969	Orissa	3949.09
1970	West Bengal	5209.07
1970	Tamil Nadu	5006.9
1970	Orissa	3831.5

2. Top 5 Districts by Wheat Yield Increase Over the Last 5 Years

```
select dist_name,
(sum(if(year=(select max(year) from agri_data), wheat_yield_kg_per_ha, null)) -
 sum(if(year=(select max(year)-4 from agri_data), wheat_yield_kg_per_ha, null))) as
yield_increase
from agri_data
group by dist_name
order by yield_increase desc
limit 5;
```

Output:

Result Grid | Filter Rows:

dist_name	yield_increase
Chamba	2015.44
Vidisha	1815.15
Dewas	1800.5500000000006
Damoh	1645.57
Darjeeling	1586.63

3.States with the highest growth in oilseed production (5-year growth rate)

```
set @current_year = (select max(year) from agri_data);
set @ago_5 = @current_year - 4;

select state_name,
sum(if(year=@current_year, oilseeds_production_1000_tons, 0)) as current_year,
sum(if(year=@ago_5, oilseeds_production_1000_tons, 0)) as five_year_ago,
round(((sum(if(year=@current_year, oilseeds_production_1000_tons, 0)) -
      sum(if(year=@ago_5, oilseeds_production_1000_tons, 0))) /
      sum(if(year=@ago_5, oilseeds_production_1000_tons, 0)) ) * 100, 2) as growth_rate
from agri_data
group by state_name
order by growth_rate desc
limit 5;
```

Output:

state_name	current_year	five_year_ago	growth_rate
Andhra Pradesh	2876.5199999999995	2242.26	28.29
Haryana	1134.7	899.1000000000001	26.2
Orissa	535.34	698.57	-23.37
Jharkhand	0	32.13	-100
Madhya Pradesh	0	7107.739999999999	-100

4.District-wise correlation between area and production

```
select dist_name, rice_area_1000_ha, rice_production_1000_tons, rice_yield_kg_per_ha,
wheat_area_1000_ha, wheat_production_1000_tons, wheat_yield_kg_per_ha,
maize_area_1000_ha, maize_production_1000_tons, maize_yield_kg_per_ha
from agri_data;
```

Output:

dist_name	rice_area_	rice_produ	rice_yield_kg_pe	wheat_area_1000_ha	wheat_produ	wheat_yield_kg	maize_area	maize_production_1000_tons	maize_yield_kg_per_ha
Durg	548	185	337.59	44	20	454.55	3	2	666.67
Durg	547	409	747.71	50	26	520	3	3	1000
Durg	556.3	468	841.27	53.7	30	558.66	2.8	2	714.29
Durg	563.4	400.8	711.4	49.4	26.5	536.44	2.7	2.3	851.85
Durg	571.6	473.6	828.55	44.2	29	656.11	2.5	3.3	1320
Durg	581.8	412.9	709.69	44.4	25.8	581.08	2.7	3.1	1148.15
Durg	582.2	381	654.41	39.6	20.6	520.2	2.8	3.2	1142.86
Durg	600	471.9	786.5	37.3	18.6	498.66	2.9	2.7	931.03
Durg	587.4	219	372.83	36.5	22.4	613.7	2.9	2.9	1000
Durg	598.3	454	758.82	49.2	27.8	565.04	2.9	2.9	1000
Durg	593.6	327.1	551.04	46.9	10	213.22	3	2	666.67
Durg	600.7	572.4	952.89	53.1	27.1	510.36	3.4	2.8	823.53
Durg	612.5	362.2	591.35	48.7	25.6	525.67	3.4	2.9	852.94
Durg	616.8	330.6	535.99	44.6	17.8	399.1	3	3.6	1200
Durg	634.9	515.6	812.1	44.1	33.6	761.9	3	2.8	933.33

5.Yearly production growth of cotton in top 5 producing states

```
select a.state_name, a.year, sum(a.cotton_production_1000_tons) as cotton_production,
sum(a.cotton_production_1000_tons)-lag(sum(a.cotton_production_1000_tons)) over(partition
by a.state_name order by a.year) as growth_rate
from agri_data a
join(
select state_name from agri_data
group by state_name
order by sum(cotton_production_1000_tons) desc
limit 5) t
on a.state_name = t.state_name
group by a.state_name, a.year
order by a.state_name, a.year;
```

Output:

state_name	year	cotton_production	growth_rate
Gujarat	1966	252	NULL
Gujarat	1967	271	19
Gujarat	1968	264	-7
Gujarat	1969	295.3	31.30000000000001
Gujarat	1970	323.90000000000003	28.600000000000023
Gujarat	1971	451.4	127.49999999999994
Gujarat	1972	292.70000000000005	-158.69999999999993
Gujarat	1973	312.59999999999997	19.899999999999992
Gujarat	1974	254.20000000000002	-58.39999999999995
Gujarat	1975	316.59999999999997	62.39999999999995
Gujarat	1976	317	0.4000000000000341
Gujarat	1977	366.49999999999994	49.49999999999994
Gujarat	1978	374.09999999999997	7.600000000000023
Gujarat	1979	303.59999999999997	-70.5
Gujarat	1980	291.5	-12.099999999999966

6.Districts with the highest groundnut production in 2017

```
select dist_name, sum(groundnut_production_1000_tons) as groundnut_production
from agri_data
where year = 2017
group by dist_name
order by groundnut_production desc
limit 7;
```

Output:

dist_name	groundnut_production
Jamnagar	977.65
Junagadh	945.49
Rajkot	873.87
Bikaner	514.09
Ananthapur	454.94
Banaskantha	288.21
North Arcot / Vellore	280.51

7.Annual average maize yield across all states

```
select year, round(avg(maize_yield_kg_per_ha),2) as avg_maize_yield
from agri_data
group by year
order by year;
```

Output:

year	avg_maize_yield
1966	734.27
1967	869.54
1968	709.26
1969	781.48
1970	1094.18
1971	848.64
1972	895.13
1973	886.84
1974	852.94
1975	1026.01
1976	966.65
1977	946.53
1978	964.88
1979	984.16
1980	1067.09

8.Total area cultivated for oilseeds in each state

```
select state_name, sum(oilseeds_area_1000_ha) as total_oilseeds_area
from agri_data
group by state_name
order by total_oilseeds_area desc;
```

Output:

state_name	total_oilseeds_area
Madhya Pradesh	189945.92
Rajasthan	142433.47000000003
Maharashtra	134069.16000000018
Gujarat	130724.71000000014
Karnataka	92527.22999999992
Andhra Prad	0000003
Tamil Nadu	56225.639999999985
Uttar Pradesh	43047.07000000005
Orissa	39682.049999999945
Telangana	35293.43
Kerala	34348.94000000003
Haryana	21465.53999999998
West Bengal	20300.760000000002
Chhattisgarh	17267.080000000013
Assam	14176.640000000001

Andhra Pradesh

9.Districts with the highest rice yield

```
select dist_name, avg(rice_yield_kg_per_ha) as rice_yield
from agri_data
group by dist_name
order by rice_yield desc
limit 10;
```

Output:

dist_name	rice_yield
Ludhiana	3650.4340384615384
Sangrur	3532.896730769232
Thirunelveli	3387.5055769230776
Bhatinda	3363.1588461538463
Madurai	3276.9823076923067
Kanyakumari	3240.6934615384607
Ferozpur	3234.0561538461534
Patiala	3222.1300000000006
Jalandhar	3187.0276923076917
Salem	3102.583461538461

10.Compare wheat & rice production for top 5 states over 10 years

```
select a.year, a.state_name, sum(a.rice_production_1000_tons) as rice_prod,
sum(a.wheat_production_1000_tons) as wheat_prod from agri_data a
join(select state_name, sum(rice_production_1000_tons) + sum(wheat_production_1000_tons)
as total from agri_data
where year between (select max(year) - 9 from agri_data) and (select max(year) from agri_data)
group by state_name order by total desc limit 5) t
on a.state_name = t.state_name
where a.year between (select max(year) - 9 from agri_data) and (select max(year) from
agri_data)
group by a.year, a.state_name
ORDER BY a.year, wheat_prod desc;
```

Output:

year	state_name	rice_prod	wheat_prod
2008	Uttar Pradesh	13080.929999999998	29110.930000000008
2008	Punjab	11000	15733
2008	Haryana	3299	11360
2008	Madhya Pradesh	1036.93	7272.200000000001
2008	West Bengal	15037.3	764.5
2009	Uttar Pradesh	11840.15	27910.799999999996
2009	Punjab	11236	15169
2009	Haryana	3628	10488
2009	Madhya Pradesh	1355.6	8865.300000000001
2009	West Bengal	14340.599999999999	846.6999999999998
2010	Uttar Pradesh	12363.540000000005	30602.909999999993
2010	Punjab	10819	16472
2010	Haryana	3465	11578
2010	Madhya Pradesh	1766.6000000000001	9219.8
2010	West Bengal	13389.619999999999	874.4200000000001