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Experiment No.	C5
Topic	Crime Records

AIM:	**To perform Aggregate function and Group by-Having clause on database**
Program 1	
PROBLEM STATEMENT:	Aggregate function Count(), Sum(), Avg(), Min() and Max() Group by-Having clause on the database

RESULT:

Table 1:

```
5     -- Create Criminal Table --
6 •   CREATE TABLE Criminal (
7     criminal_id INT PRIMARY KEY, name VARCHAR(30), birth_place VARCHAR(20), dob DATE, gender ENUM("Male", "Female"),
8     blood_group ENUM("O+", "A+", "B+", "AB+", "O-", "A-", "B-", "AB-"), national_id BIGINT UNSIGNED, passport_id BIGINT UNSIGNED,
9     threat_level ENUM("Low", "High", "Severe"), previous_occupation_name VARCHAR(20),
10    previous_occupation_income INT UNSIGNED, current_occupation_name VARCHAR(20),
11    current_occupation_income INT UNSIGNED
12    );
```

Table 2:

```
37 •  CREATE TABLE Physical_Appearance(id INT NOT NULL, height varchar(3), weight varchar(3),
38    eye_color varchar(10), hair_color varchar(10), FOREIGN KEY (id) REFERENCES Criminal(criminal_id)
39    );
```

Count:

```
3     -- Count the number of criminals by gender --
4 •   SELECT gender, COUNT(*) AS gender_count
5     FROM Criminal
6     GROUP BY gender;
```

Result

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

gender	gender_count
Male	5
Female	5

Sum:

```
8   -- Sum of previous and present income of all criminals --
9   SELECT name, SUM(current_occupation_income + previous_occupation_income) AS total_income
10  FROM Criminal
11  GROUP BY name;
```

Result

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

name	total_income
Ravi Kumar	75000
Priya Sharma	100000
Rajesh Singh	110000
Anjali Gupta	175000
Mohan Sharma	120000
Sunita Reddy	75000
Rohit Patel	180000
Nisha Gupta	145000
Sanjay Yadav	90000
Aishwarya Gupta	130000

Avg:

```
13  -- Average age of all criminals --
14  SELECT ROUND(AVG(DATEDIFF(CURDATE(), dob) / 365), 2) AS avg_age
15  FROM Criminal;
```

Result

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

avg_age
34.22

Min:

```
17  -- Criminal having the lowest current income --
18  SELECT name, current_occupation_income
19  FROM Criminal
20  WHERE current_occupation_income = (SELECT MIN(current_occupation_income) FROM Criminal);
```

Result

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

name	current_occupation_income
Ravi Kumar	40000

Max:

```
22      -- Criminal having the highest previous income --
23 •    SELECT name, previous_occupation_income
24      FROM Criminal
25      WHERE previous_occupation_income = (SELECT MAX(previous_occupation_income) FROM Criminal);
```

Result

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

name	previous_occupation_income
Anjali Gupta	75000

Group by-Having:

```
27      -- Group criminals by blood group and find blood groups with at least 2 individuals --
28 •    SELECT blood_group
29      FROM Criminal
30      GROUP BY blood_group
31      HAVING COUNT(*) >= 2;
```

Result

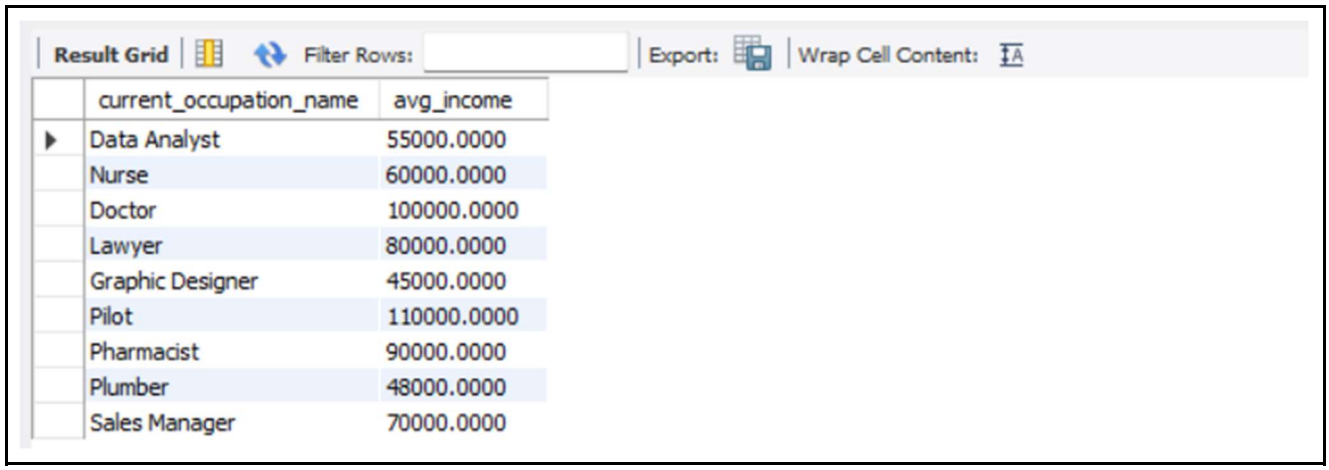
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

blood_group
A+
O+

Group by-Having:

```
33      -- Group criminals by current occupation and list occupations having an average income greater than 40000 --
34 •    SELECT current_occupation_name, AVG(current_occupation_income) AS avg_income
35      FROM Criminal
36      GROUP BY current_occupation_name
37      HAVING avg_income > 40000;
```

Result



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

current_occupation_name	avg_income
Data Analyst	55000.0000
Nurse	60000.0000
Doctor	100000.0000
Lawyer	80000.0000
Graphic Designer	45000.0000
Pilot	110000.0000
Pharmacist	90000.0000
Plumber	48000.0000
Sales Manager	70000.0000