Analysis

1. **How many entries do you have in your database who have applied for Spring 2025?**
   Answer: *Applicant count: 142*
   Query Used: "SELECT COUNT(*) FROM Applicants WHERE term = 'Spring 2025';",
   Description: Using a Select statement with a count(*) function will return the number of rows in Applicants to match the criteria. In this case the term we are looking at is 'Spring 2025' so we use WHERE to match the rows.

2. **What percentage of entries are from international students (not American or Other) (to two decimal places)?**
   Answer: *Percent International: 48.54*
   Query Used: "SELECT CAST((ROUND ((COUNT(*)*100.0)/ (SELECT COUNT(*) FROM Applicants),2)) AS FLOAT) AS Percentage FROM Applicants WHERE US_OR_INTERNATIONAL <> 'American';"
   Description: This query calculates the percentage of non-American applicants by leveraging a nested SELECT statement. The inner query computes the total number of applicants, while the outer query calculates the percentage of non-Americans by dividing the count of non-American applicants by the total number of applicants and multiplying by 100.0. The result is rounded to 2 decimal places and labeled as 'Percentage'. To ensure accurate decimal representation, we cast the result to a float, avoiding any potential Decimal object notation in the output.

3. **What is the average GPA, GRE, GRE V, GRE AW of applicants who provide these metrics?**
   Answer: Average GPA: 3.71, Average GRE: 266.56, Average GRE_V: 159.79, Average GRE_AW:12.09
   Query Used: "SELECT CAST(ROUND(AVG(gpa)::NUMERIC, 2) AS FLOAT) as GPA_avg, CAST(ROUND(AVG(gre)::NUMERIC, 2) AS FLOAT) as GRE_avg, CAST(ROUND(AVG(gre_v)::NUMERIC,2) AS FLOAT) as GRE_V_avg, CAST(ROUND(AVG(gre_aw)::NUMERIC,2) AS FLOAT) as GRE_AW_avg FROM Applicants;",

   Description: This query calculates the average of GPA, GRE, GRE_V, and GRE_AW using a SELECT statement with the AVG function. To ensure precise results, the AVG function is cast to NUMERIC, and the ROUND function is applied to limit the output to 2 decimal places. Finally, the result is cast to a float to guarantee accurate decimal representation and avoid Decimal object notation in the output.

4. **What is their average GPA of American students in Spring 2025?**
   Answer: *Averate GPA American: 3.36*
   Query Used: "SELECT CAST(ROUND(AVG(gpa)::NUMERIC,2) AS FLOAT) as GPA_avg FROM Applicants WHERE term = 'Spring 2025' AND US_OR_INTERNATIONAL = 'American'; ",

   Description: This query calculates the average GPA of American students in Spring 2025. Using a SELECT statement with the AVG function, it computes the average GPA and rounds the result to 2 decimal places using the ROUND function. To ensure accurate calculations, the AVG result is cast

to NUMERIC, and the result is cast to a float to guarantee precise decimal representation and avoid Decimal object notation in the output.

5. **What percent of entries for Spring 2025 are Acceptances (to two decimal places)?**
Answer: *Acceptance percent: 64.79*
Query Used: "SELECT CAST((ROUND ((COUNT(*)*100.0)/ (SELECT COUNT(*) FROM Applicants WHERE term = 'Spring 2025'),2)) AS FLOAT) AS Percentage FROM Applicants WHERE status ~* 'Accepted' AND term = 'Spring 2025';",

Description: This query calculates the acceptance rate for Spring 2025 applicants. A nested SELECT statement is used to count the total number of applicants and the number of applicants with an 'Accepted' status (case-insensitive). The acceptance rate is then calculated and rounded to 2 decimal places using the ROUND function. Finally, the result is cast to a float to ensure precise decimal representation and avoid Decimal object notation in the output.

6. **What is the average GPA of applicants who applied for Spring 2025 who are Acceptances?**
Answer: *Average GPA Acceptance: 3.58*
Query Used: "SELECT CAST(ROUND(AVG(gpa)::NUMERIC,2) AS FLOAT) AS Average FROM Applicants WHERE status ~* 'Accepted' AND term = 'Spring 2025';",

Description: This query calculates the average GPA of applicants who were accepted for the term Spring 2025. It uses the AVG() aggregation function to compute the mean GPA from applicants whose status matches 'Accepted' using a case-insensitive regular expression (), and term is 'Spring 2025'. Finally, the result is cast to a float to guarantee accurate decimal representation and avoid Decimal object notation in the output.

7. **How many entries are from applicants who applied to JHU for a masters degrees in Computer Science?**
Answer: *JHU Masters Computer Science count: 9*
Query Used: "SELECT COUNT(*) FROM Applicants WHERE program ~* 'JHU' OR program ~* 'Johns Hopkins' AND degree ='Masters' AND program ~* 'Computer Science';",

Description: This query counts the number of applicants who applied to a Master's program in Computer Science at Johns Hopkins University. The program field must match either 'JHU' or 'Johns Hopkins' using case-insensitive regular expressions (*). The degree must be 'Masters'. The program must also include 'Computer Science' (again using case-insensitive regex).