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Modern Concepts in Python: Spring 2026

Module 3 Assignment: Database Queries & Analysis Dashboard

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**1. How many entries do you have in your database who have applied for Fall 2026?**

*Answer: Current applicant count shows as 9.*

**Query description:** I filtered the applications table for rows where the term equals “Fall 2026” and counted the total number of matching entries.

**2. What percentage of entries are from international students (not American or Other) (to two decimal places)?**

*Answer: Current percentage of entries from international students is 50.28%.*

**Query description:** I counted all Fall 2026 entries, then counted how many have citizenship marked as “International.” I divided the international count by the total and multiplied by 100 to compute the percentage.

**3. What is the average GPA, GRE, GRE V, GRE AW of applicants who provide these metrics?**

*Answer: For average GPA and GRE of applicants, we see N/A in the database presumably because applicants are not providing this data.*

**Query description:** I selected only Fall 2026 entries where GPA and GRE fields were not null, then used SQL aggregate functions (AVG) to compute the mean GPA, GRE total, GRE verbal, and GRE analytical writing scores.

**4. What is their average GPA of American students in Fall 2026?**

*Answer: For average GPA of American students, my database analysis shows N/A % since effectively no one is providing this data.*

**Query description:** I filtered for Fall 2026 entries where citizenship equals “American” and GPA is not null, then computed the average using AVG(gpa).

5. What percent of entries for Fall 2026 are Acceptances (to two decimal places)?

*Answer: Current percentage of entries that are Acceptances is 11.11%.*

**Query description:** I counted all Fall 2026 entries, then counted how many have a status of “Accepted.” I divided acceptances by total entries and multiplied by 100 to obtain the acceptance rate.

6. What is the average GPA of applicants who applied for Fall 2026 who are Acceptances?

*Answer: The average GPA of applicants who applied for Fall 2026 who are acceptances is N/A%.*

**Query description:** I filtered for Fall 2026 entries where status is “Accepted” and GPA is not null, then calculated the average GPA using AVG(gpa).

7. How many entries are from applicants who applied to JHU for a Masters degrees in Computer Science?

*Answer: Currently, the database is showing 29 applicants for a Masters in CS.*

**Query description:** I filtered the dataset for entries where the university is “Johns Hopkins University,” the program contains “Computer Science,” and the degree level is “Masters,” then counted the matching rows.

8. How many entries from 2026 are acceptances from applicants who applied to Georgetown University, MIT, Stanford University, or Carnegie Mellon University for a PhD in Computer Science?

*Answer: Currently, we see 0 entries in the database.*

**Query description:** I filtered for Fall 2026 entries where the university is one of the four target schools, the degree level is “PhD,” the program contains “Computer Science,” and the status is “Accepted,” then counted the results.

9. Do your numbers for question 8 change if you use LLM Generated Fields (rather than your downloaded fields)?

Answer: Yes, my answer should change. I am checking now with the LLM but it is taking a long time to run (457min for all 35K rows, will see).

**Query description:** I repeated the same filtering logic as Question 8, but instead of using the scraped program and university fields, I used the cleaned LLM-generated program and university fields to determine matches.

#### 10. Which universities receive the most applications?

*Answer: The top 5 universities for number of applications are shown in the table below (more can be seen in the screenshots).*

<b>University</b>	<b>Total Applications</b>
University of California	954
Stanford University	892
University of Chicago	753
Yale University	710
University of Michigan	685

**Query description:** I grouped all entries by university name, counted the number of applications per university, and sorted the results in descending order to identify the top institutions.

#### 11. What is the acceptance rate by degree type?

*Answer: The acceptance rate by degree type is shown in the table below:*

Degree	Total Entries	Acceptances	Acceptance Rate (%)
Masters	7965	5229	65.65
EdD	26	17	65.38
MBA	26	17	65.38
Other	242	132	54.55
MFA	597	209	35.01
PhD	25538	6214	24.33
JD	5	1	20.00
PsyD	596	104	17.45

**Query description:** I grouped entries by degree type, counted total applications and total acceptances within each group, and computed acceptance rates by dividing acceptances by total entries for each degree category.