Capstone Project 1:

1. Create university Schema in MySQL Workbench
2. Download and run this code in university schema to create tables- attached DDL.sql(copy and run it)
3. Download and run this code to fill out the data- attached smallRelationsInsertFile.sql(copy and run it)

Now, Write the following queries in SQL using the university schema:

1. For each department, find the maximum salary of instructors in that department. (use windows function)

2. Find the IDs of all students who were taught by an instructor named Katz; make sure there are no duplicates in the result.

3. Find the ID and title of each course in Comp. Sci. that has had at least one section with afternoon hours (i.e., ends at or after 12:00). (You should eliminate duplicates if any.)

4. Find the IDs and titles of all the courses that are prerequisite to the Robotics course.

5. Find the IDs and names of all instructors earning the highest salary (there may be more than one with the same salary).

6. Find the enrollment (number of students) in each section that was offered in Spring 2017. The result columns should be course id, section id, students num. You do not need to output sections with 0 students.

7. Find the IDs and names of all instructors who have taught at least 3 different courses.

8. Find the ID and name of the student with the highest number of ’A’ grades (there may be more than one such student).

9. Find the ID and name of each History student who has not taken any Music courses.

10. Find the ID and name of each instructor who has never given an A grade in any course she or he has taught. (Instructors who have never taught a course trivially satisfy this condition.)

11. Rewrite the preceding query, but also ensure that you include only instructors who have given at least one other non-null grade in some course.

12. For each student who have retaken a course at least once (i.e., the student has taken the course at least two times), show the student’s ID, name and the course ID.

2 SQL Updates (10 points) Write the SQL statements to perform the following operations on the university database:

1. Create a new course ”CS-900” in the Comp. Sci. department, titled ”Weekly Seminar”, with 2 credits.

2. Create a section of this course in Fall 2022, with sec id of 2, and with the location of this section not yet specified.

3. Enroll every student in the Comp. Sci. department in the above section.

4. Delete enrollments in the above section where the student’s ID is 12345