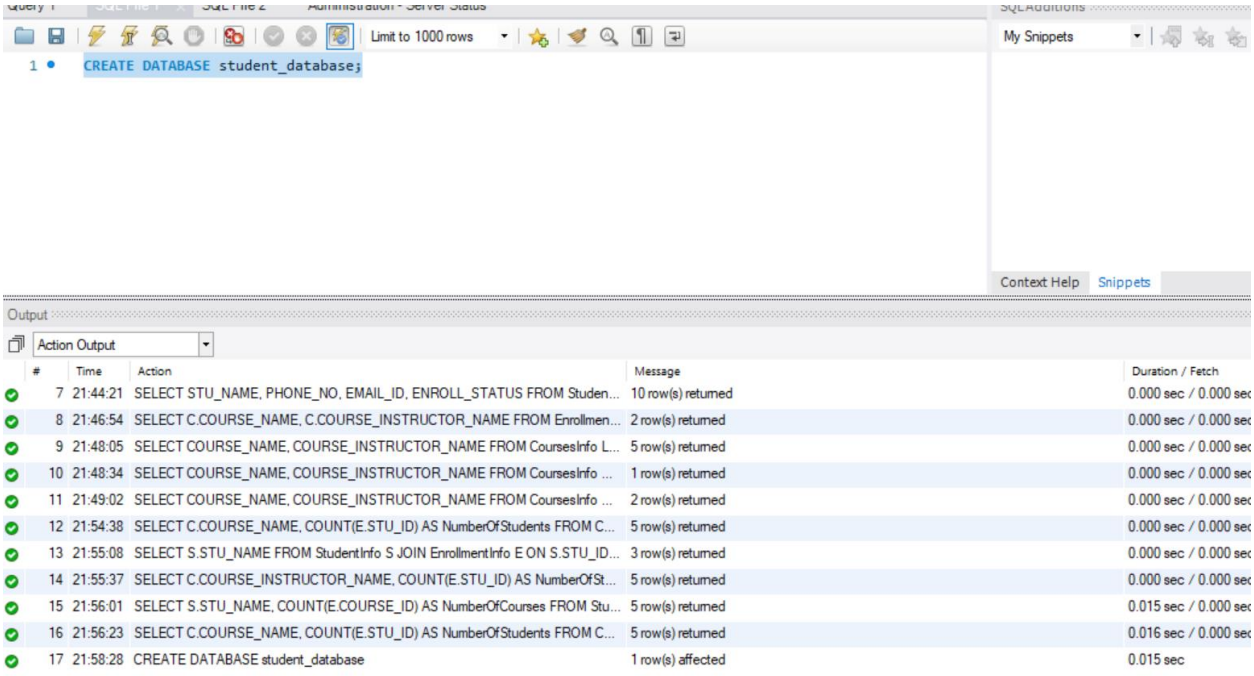
Project: Student Database Management System(PostgreSQL)

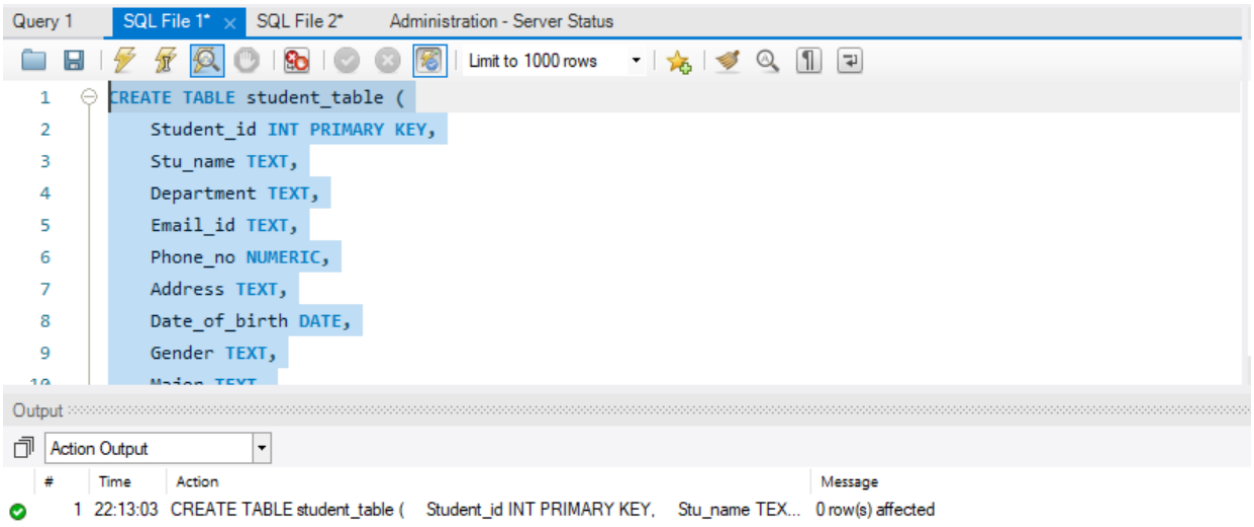
Objective: Design and implement a student database management system using PostgreSQL that allows storing and retrieving student information efficiently. The project will include the following tasks:

1. Database Setup

Create a database named ”student_database."

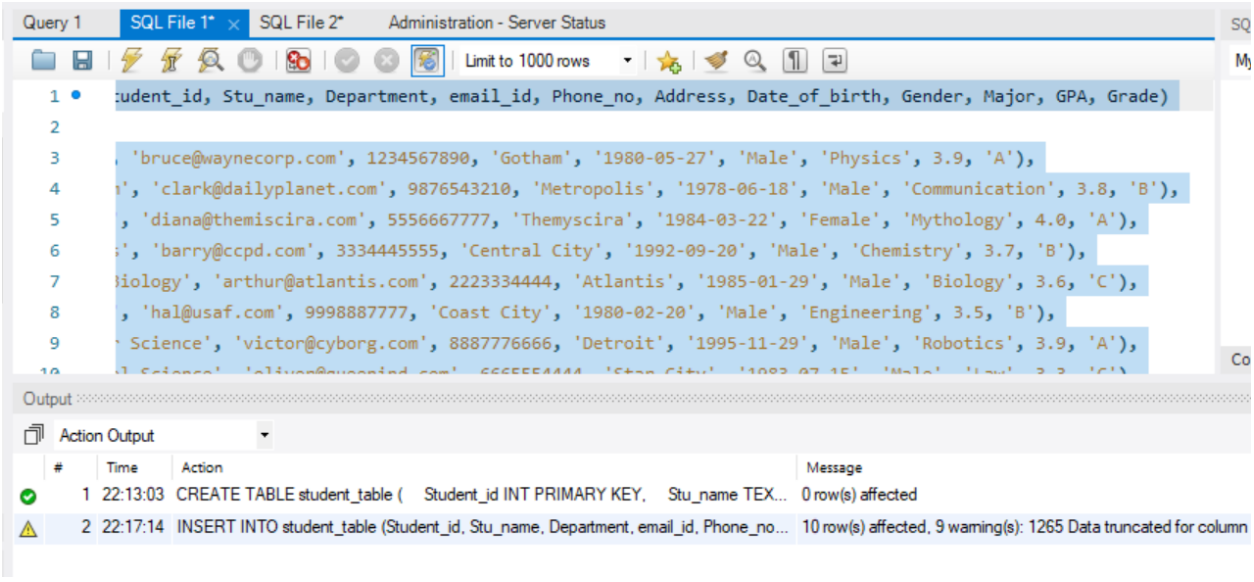
Create a table called "student_table "with the following columns: Student_id (integer), Stu_name (text), Department (text), email_id (text),Phone_no (numeric), Address (text), Date_of_birth (date), Gender (text), Major (text), GPA (numeric),Grade (text) should be A,B,Cetc.





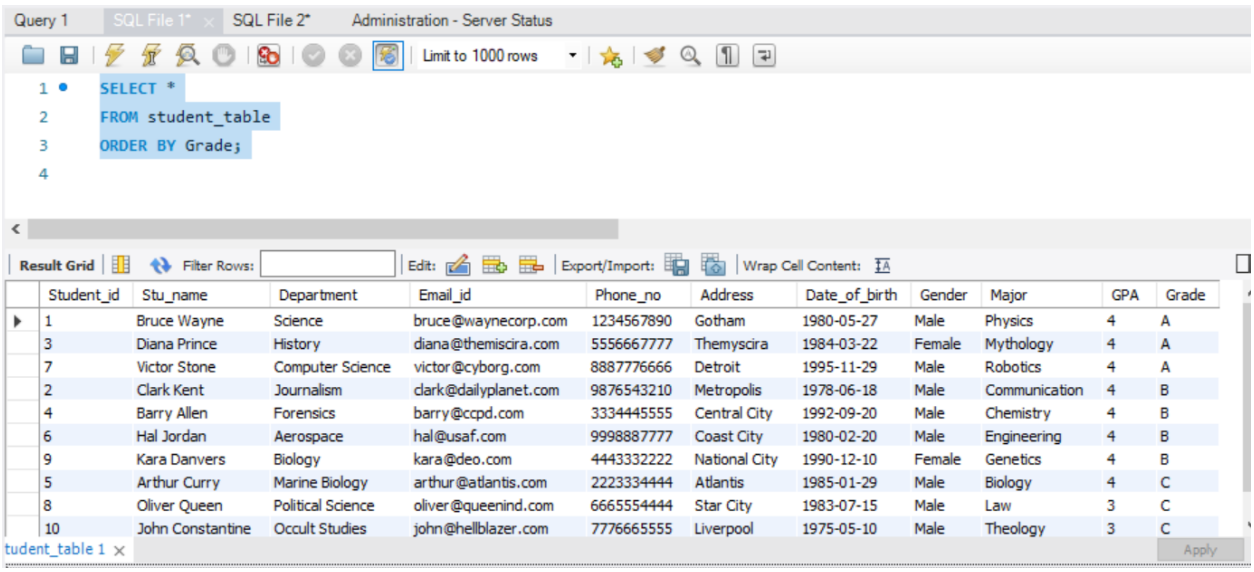
2. Data Entry

Insert 10 sample records into the "student_table" using INSERT command.3.Student



Information Retrieval

Develop a query to retrieve all students' information from the "student_table" and sort them in descending order by their grade.

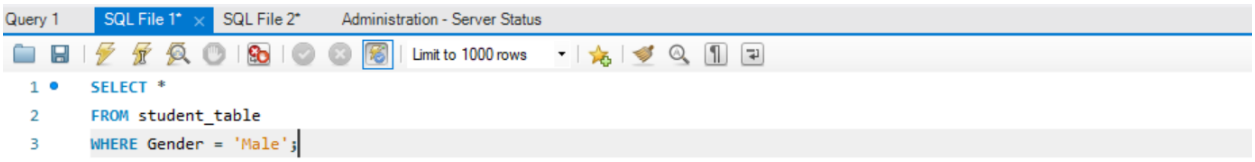


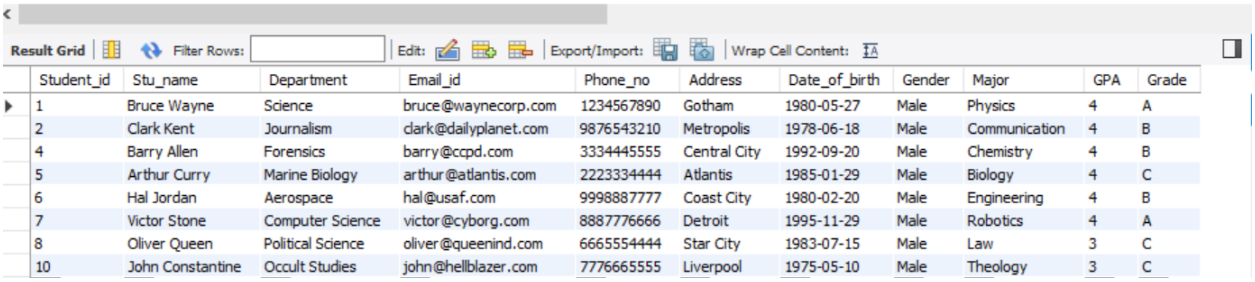
Student_id	Stu_name	Department	Email_id	Phone_no	Address	Date_of_birth	Gender	Major	GPA	Grade
1	Bruce Wayne	Science	bruce@waynecorp.com	1234567890	Gotham	1980-05-27	Male	Physics	4	A
3	Diana Prince	History	diana@themiscira.com	5556667777	Themyscira	1984-03-22	Female	Mythology	4	A
7	Victor Stone	Computer Science	victor@cyborg.com	8887776666	Detroit	1995-11-29	Male	Robotics	4	A
2	Clark Kent	Journalism	clark@dailyplanet.com	9876543210	Metropolis	1978-06-18	Male	Communication	4	B
4	Barry Allen	Forensics	barry@ccpd.com	3334445555	Central City	1992-09-20	Male	Chemistry	4	B
6	Hal Jordan	Aerospace	hal@usaf.com	9998887777	Coast City	1980-02-20	Male	Engineering	4	B
9	Kara Danvers	Biology	kara@deo.com	4443332222	National City	1990-12-10	Female	Genetics	4	B
5	Arthur Curry	Marine Biology	arthur@atlantis.com	2223334444	Atlantis	1985-01-29	Male	Biology	4	C
8	Oliver Queen	Political Science	oliver@queenind.com	6665554444	Star City	1983-07-15	Male	Law	3	C
10	John Constantine	Occult Studies	john@hellblazer.com	7776665555	Liverpool	1975-05-10	Male	Theology	3	C

tudent_table 1

4.Query for Male Students:

.Implement a query to retrieve information about all male students from the "student_table."





Student_id	Stu_name	Department	Email_id	Phone_no	Address	Date_of_birth	Gender	Major	GPA	Grade
1	Bruce Wayne	Science	bruce@waynecorp.com	1234567890	Gotham	1980-05-27	Male	Physics	4	A
2	Clark Kent	Journalism	clark@dailyplanet.com	9876543210	Metropolis	1978-06-18	Male	Communication	4	B
4	Barry Allen	Forensics	barry@ccpd.com	3334445555	Central City	1992-09-20	Male	Chemistry	4	B
5	Arthur Curry	Marine Biology	arthur@atlantis.com	2223334444	Atlantis	1985-01-29	Male	Biology	4	C
6	Hal Jordan	Aerospace	hal@usaf.com	9998887777	Coast City	1980-02-20	Male	Engineering	4	B
7	Victor Stone	Computer Science	victor@cyborg.com	8887776666	Detroit	1995-11-29	Male	Robotics	4	A
8	Oliver Queen	Political Science	oliver@queenind.com	6665554444	Star City	1983-07-15	Male	Law	3	C
10	John Constantine	Occult Studies	john@hellblazer.com	7776665555	Liverpool	1975-05-10	Male	Theology	3	C

5.Query for Students with GPA less than 5.0

Query 1 | SQL File 1* | SQL File 2* | Administration - Server Status

Limit to 1000 rows

```
1  SELECT *
2  FROM student_table
3  WHERE GPA < 5.0
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Student_id	Stu_name	Department	Email_id	Phone_no	Address	Date_of_birth	Gender	Major	GPA	Grade
1	Bruce Wayne	Science	bruce@waynecorp.com	1234567890	Gotham	1980-05-27	Male	Physics	4	A
2	Clark Kent	Journalism	clark@dailyplanet.com	9876543210	Metropolis	1978-06-18	Male	Communication	4	B
3	Diana Prince	History	diana@themiscira.com	5556667777	Themyscira	1984-03-22	Female	Mythology	4	A
4	Barry Allen	Forensics	barry@ccpd.com	3334445555	Central City	1992-09-20	Male	Chemistry	4	B
5	Arthur Curry	Marine Biology	arthur@atlantis.com	2223334444	Atlantis	1985-01-29	Male	Biology	4	C
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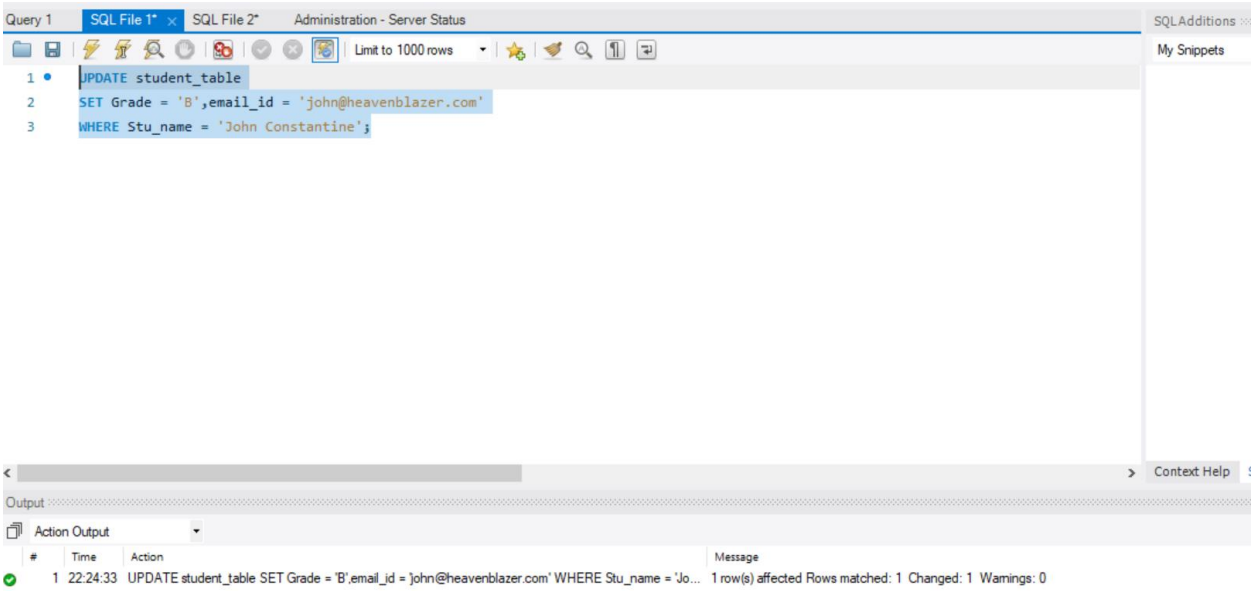
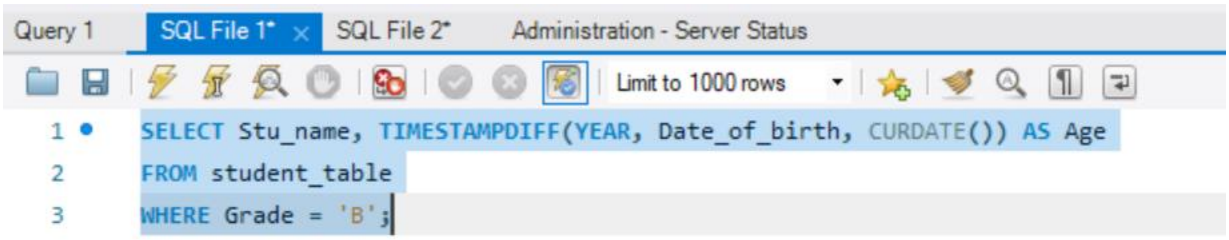
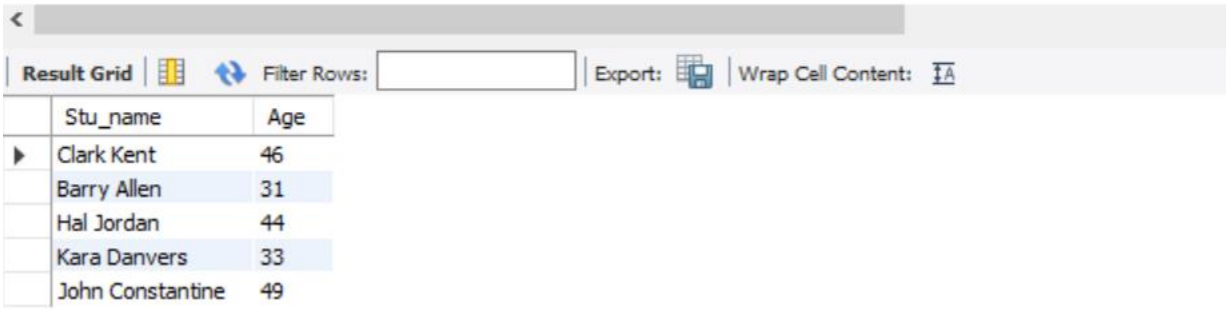
7	Victor Stone	Computer Science	victor@cyborg.com	8887776666	Detroit	1995-11-29	Male	Robotics	4	A
8	Oliver Queen	Political Science	oliver@queenind.com	6665554444	Star City	1983-07-15	Male	Law	3	C
9	Kara Danvers	Biology	kara@deo.com	4443332222	National City	1990-12-10	Female	Genetics	4	B
10	John Constantine	Occult Studies	john@hellblazer.com	7776665555	Liverpool	1975-05-10	Male	Theology	3	C

6. Update Student Email and Grade



7. Query for Students with Grade "B"

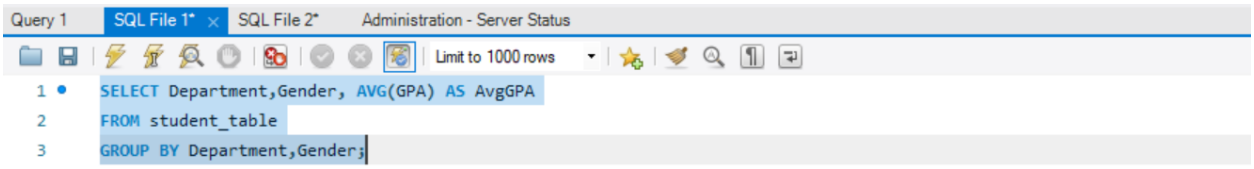


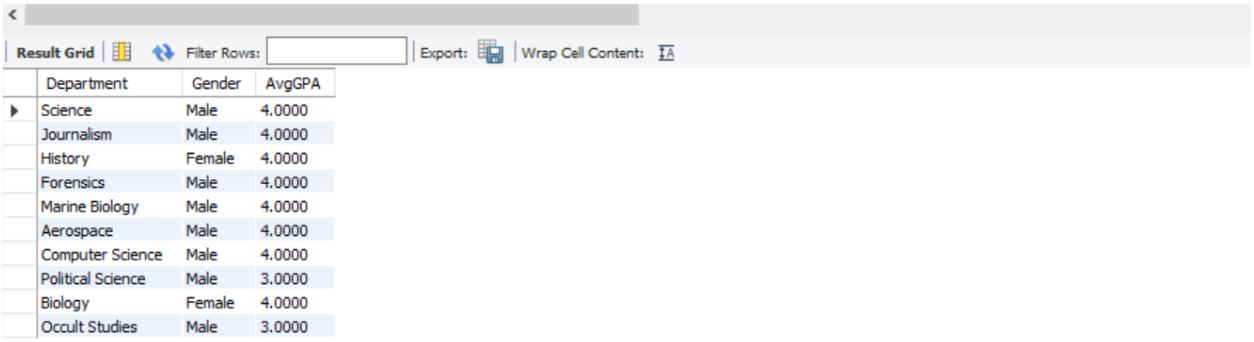


Stu_name	Age
Clark Kent	46
Barry Allen	31
Hal Jordan	44
Kara Danvers	33
John Constantine	49

8. Grouping and Calculation

Create a query to group the "student_table" by the "Department" and "Gender" columns andcalculate the average GPA for each combination.

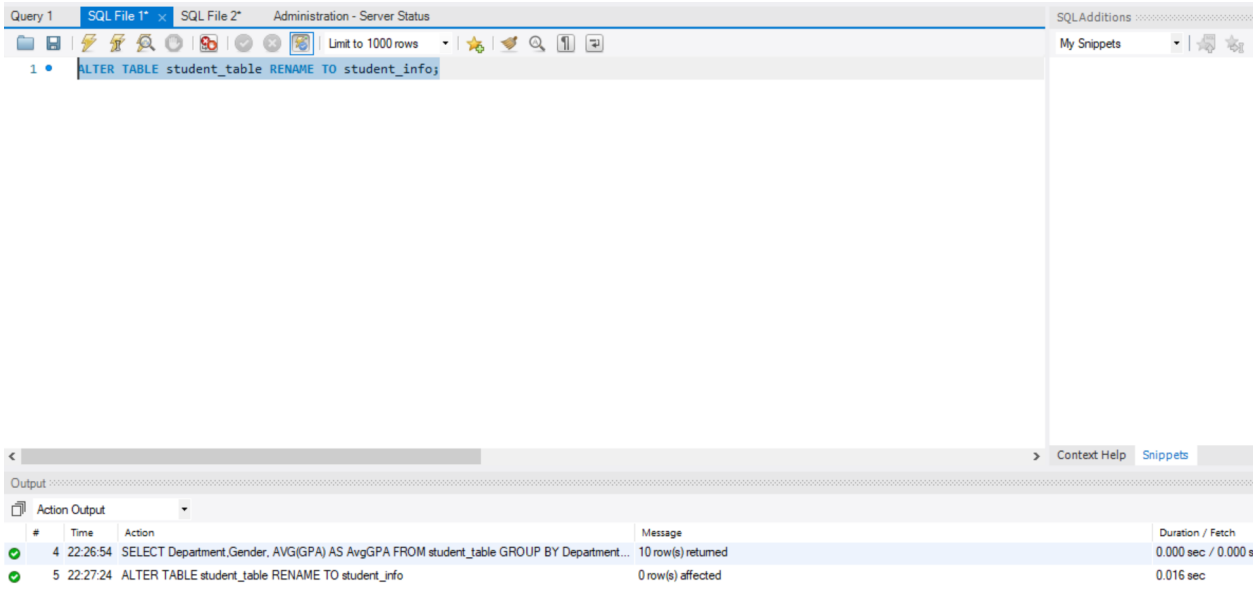




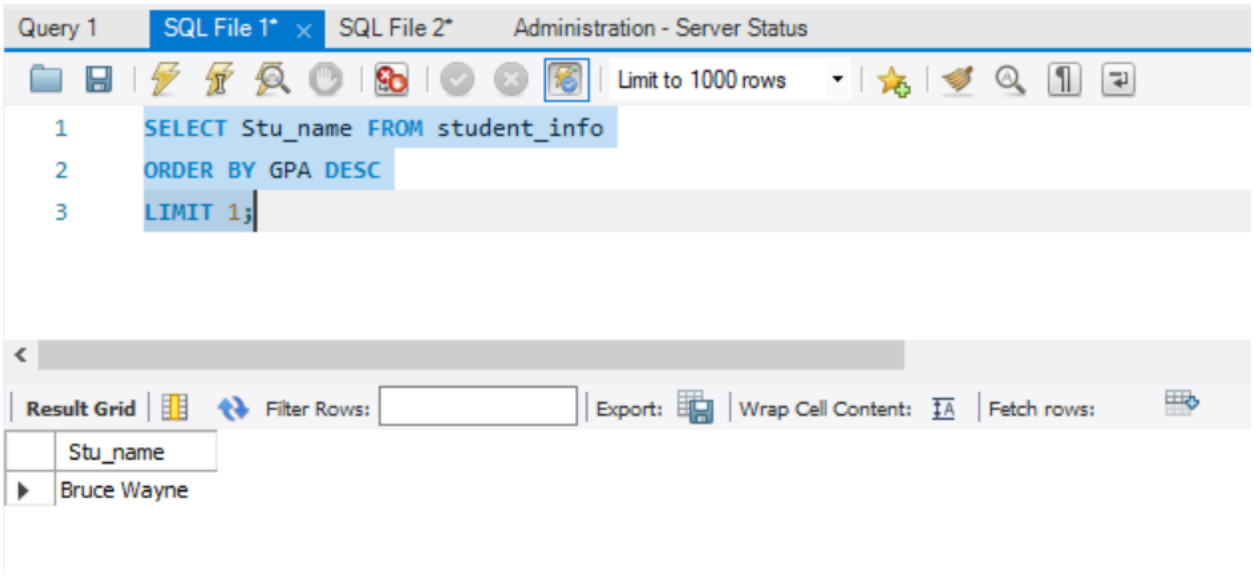
Department	Gender	AvgGPA
Science	Male	4.0000
Journalism	Male	4.0000
History	Female	4.0000
Forensics	Male	4.0000
Marine Biology	Male	4.0000
Aerospace	Male	4.0000
Computer Science	Male	4.0000
Political Science	Male	3.0000
Biology	Female	4.0000
Occult Studies	Male	3.0000

9. Table Renaming

Rename the "student_table" to "student_info" using the appropriate SQL statement.



10. Retrieve Student with Highest GPA


Query 1
SQL File 1*
SQL File 2*
Administration - Server Status
Limit to 1000 rows
1 SELECT Stu_name FROM student_info
2 ORDER BY GPA DESC
3 LIMIT 1;
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
Fetch rows:
Stu_name
Bruce Wayne