**Class Test 04**

**Table: Student\_info**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S\_Id | S\_Name | S\_CGPA | S\_BloodStatus | S\_BloodGroup | a\_id |
| 1 | Mira | 3.59 | Halfblood | O+ | 11 |
| 2 | Rahman | 3.90 | Pureblood | A+ | 11 |
| 3 | Sharon |  | Pureblood | B+ | 22 |
| 4 | Caprio | 3.21 | Pureblood | AB+ | 22 |
| 5 | Winslet | 3.55 | Muggleborn | AB- | 33 |
| 6 | Khadija | 2.85 |  | O- | 33 |
| 7 | Shekhar | 2.30 | Pureblood | O+ | 44 |
| 8 | Florina | 3.10 | Pureblood | B+ | 44 |

**Table: Address**

|  |  |  |  |
| --- | --- | --- | --- |
| a\_id | city | country | Country\_code |
| 11 | Dhaka | Bangladesh | 101 |
| 22 | Doha | Qatar | 102 |
| 33 | Washington D.C | USA | 103 |
| 44 | London | UK | 104 |

Write down the queries of the following questions:

Table Creation Query:

Student Info:

CREATE TABLE Student\_info (

S\_Id NUMBER PRIMARY KEY,

S\_Name VARCHAR2(50),

S\_CGPA NUMBER(3,2),

S\_BloodStatus VARCHAR2(20),

S\_BloodGroup VARCHAR2(5),

a\_id NUMBER

);

Address:

CREATE TABLE Address (

a\_id NUMBER PRIMARY KEY,

city VARCHAR2(50),

country VARCHAR2(50),

country\_code NUMBER

);

Data insertion Query:

Address:

INSERT INTO Address VALUES (11, 'Dhaka', 'Bangladesh', 101);

INSERT INTO Address VALUES (22, 'Doha', 'Qatar', 102);

INSERT INTO Address VALUES (33, 'Washington D.C', 'USA', 103);

INSERT INTO Address VALUES (44, 'London', 'UK', 104);

Student Info:

INSERT INTO Student\_info VALUES (1, 'Mira', 3.59, 'Halfblood', 'O+', 11);

INSERT INTO Student\_info VALUES (2, 'Rahman', 3.90, 'Pureblood', 'A+', 11);

INSERT INTO Student\_info VALUES (3, 'Sharon', NULL, 'Pureblood', 'B+', 22);

INSERT INTO Student\_info VALUES (4, 'Caprio', 3.21, 'Pureblood', 'AB+', 22);

INSERT INTO Student\_info VALUES (5, 'Winslet', 3.55, 'Muggleborn', 'AB-', 33);

INSERT INTO Student\_info VALUES (6, 'Khadija', 2.85, NULL, 'O-', 33);

INSERT INTO Student\_info VALUES (7, 'Shekhar', 2.30, 'Pureblood', 'O+', 44);

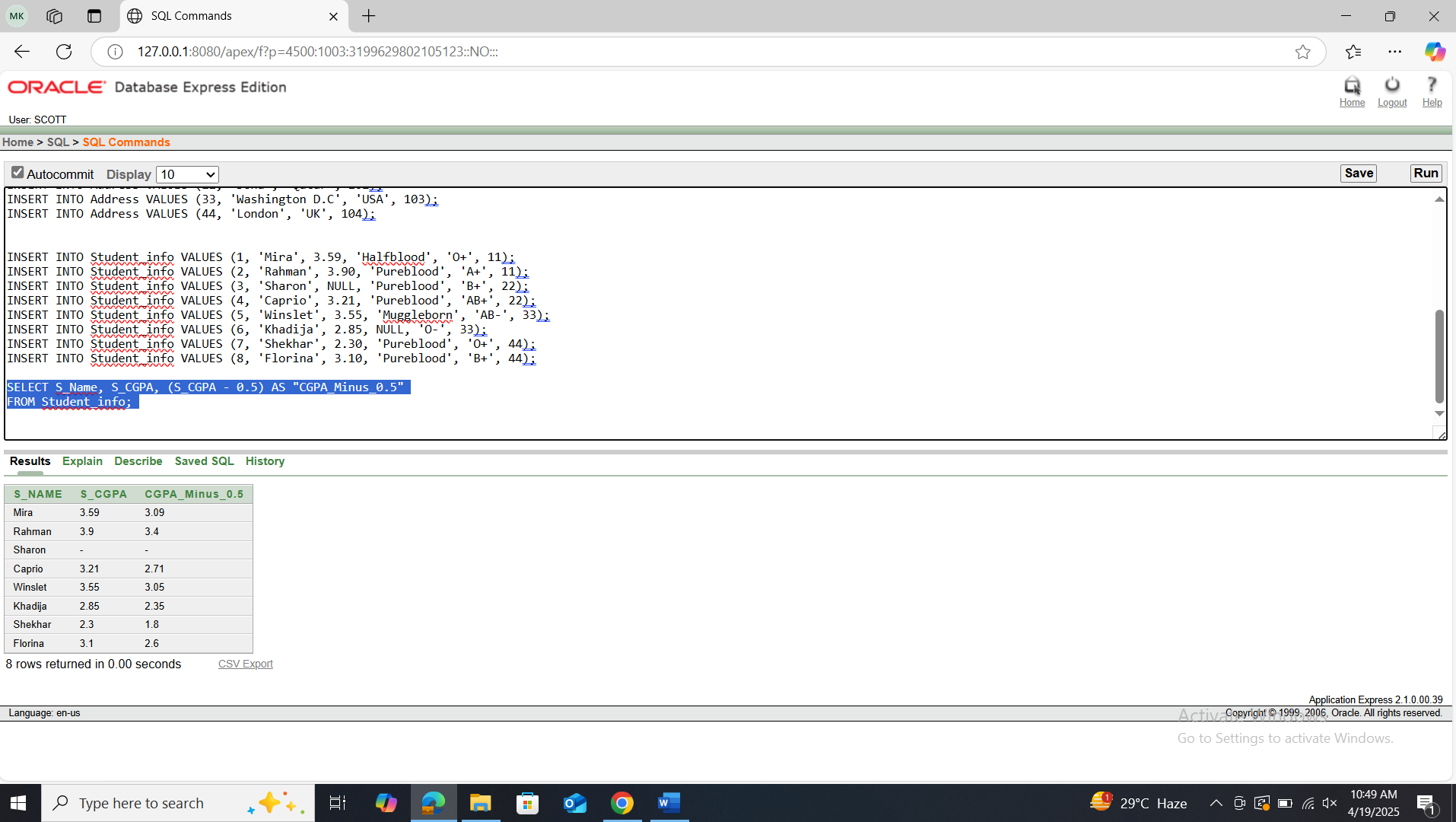
INSERT INTO Student\_info VALUES (8, 'Florina', 3.10, 'Pureblood', 'B+', 44);

1. Display the name, CGPA, (CGPA-0.5) of the students from the Student\_info table.

**SQL Solution:**

Query: SELECT S\_Name, S\_CGPA, (S\_CGPA - 0.5) AS "CGPA\_Minus\_0.5"

FROM Student\_info;



**PL/SQL Solution:**

Query: BEGIN

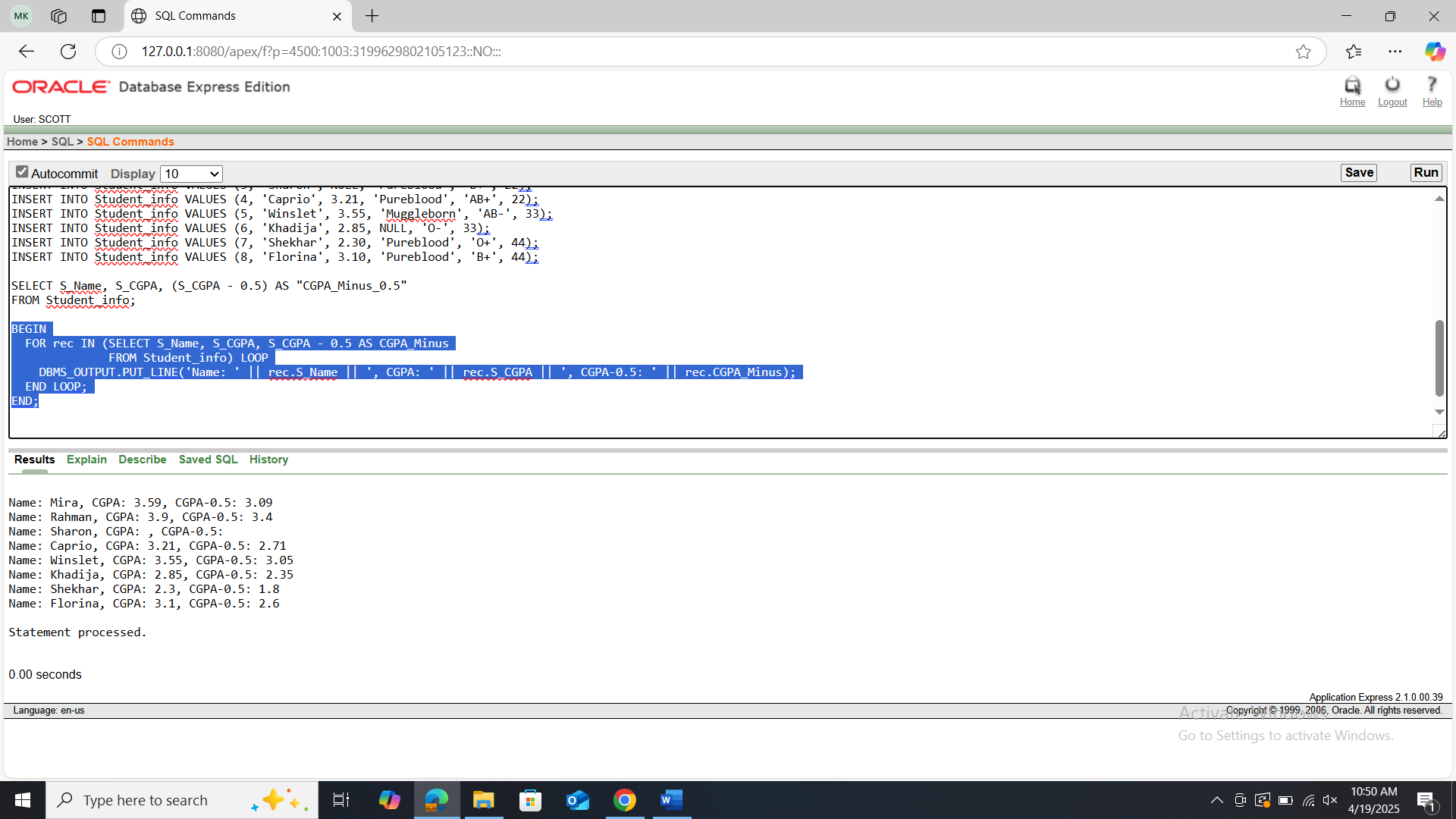
FOR rec IN (SELECT S\_Name, S\_CGPA, S\_CGPA - 0.5 AS CGPA\_Minus

FROM Student\_info) LOOP

DBMS\_OUTPUT.PUT\_LINE('Name: ' || rec.S\_Name || ', CGPA: ' || rec.S\_CGPA || ', CGPA-0.5: ' || rec.CGPA\_Minus);

END LOOP;

END;

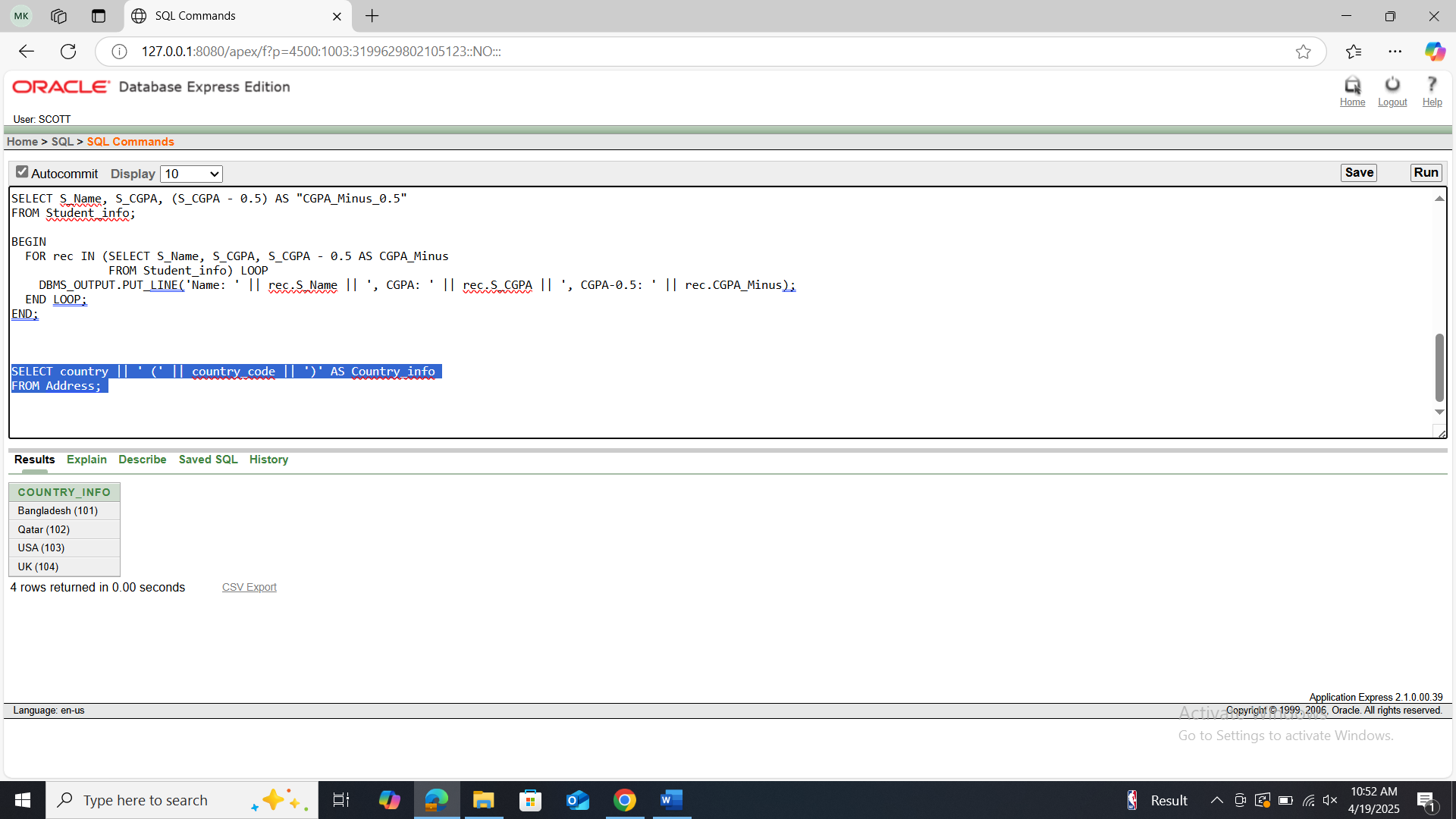


1. Display country and country code together as “Country\_info” using concatenation function.

**SQL Solution:**

Query: SELECT country || ' (' || country\_code || ')' AS Country\_info

FROM Address;



**PL/SQL Solution:**

Query: BEGIN

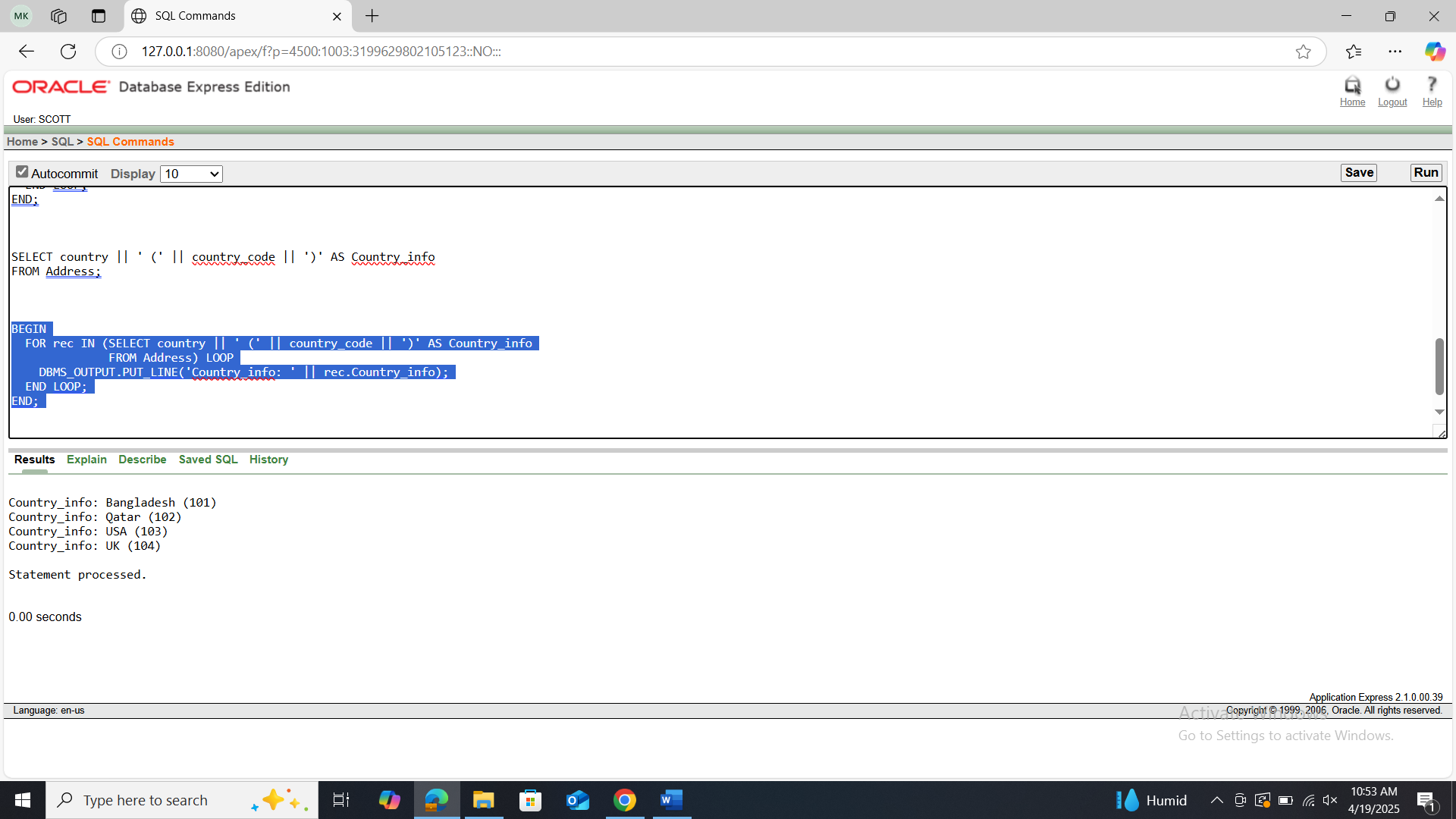
FOR rec IN (SELECT country || ' (' || country\_code || ')' AS Country\_info

FROM Address) LOOP

DBMS\_OUTPUT.PUT\_LINE('Country\_info: ' || rec.Country\_info);

END LOOP;

END;

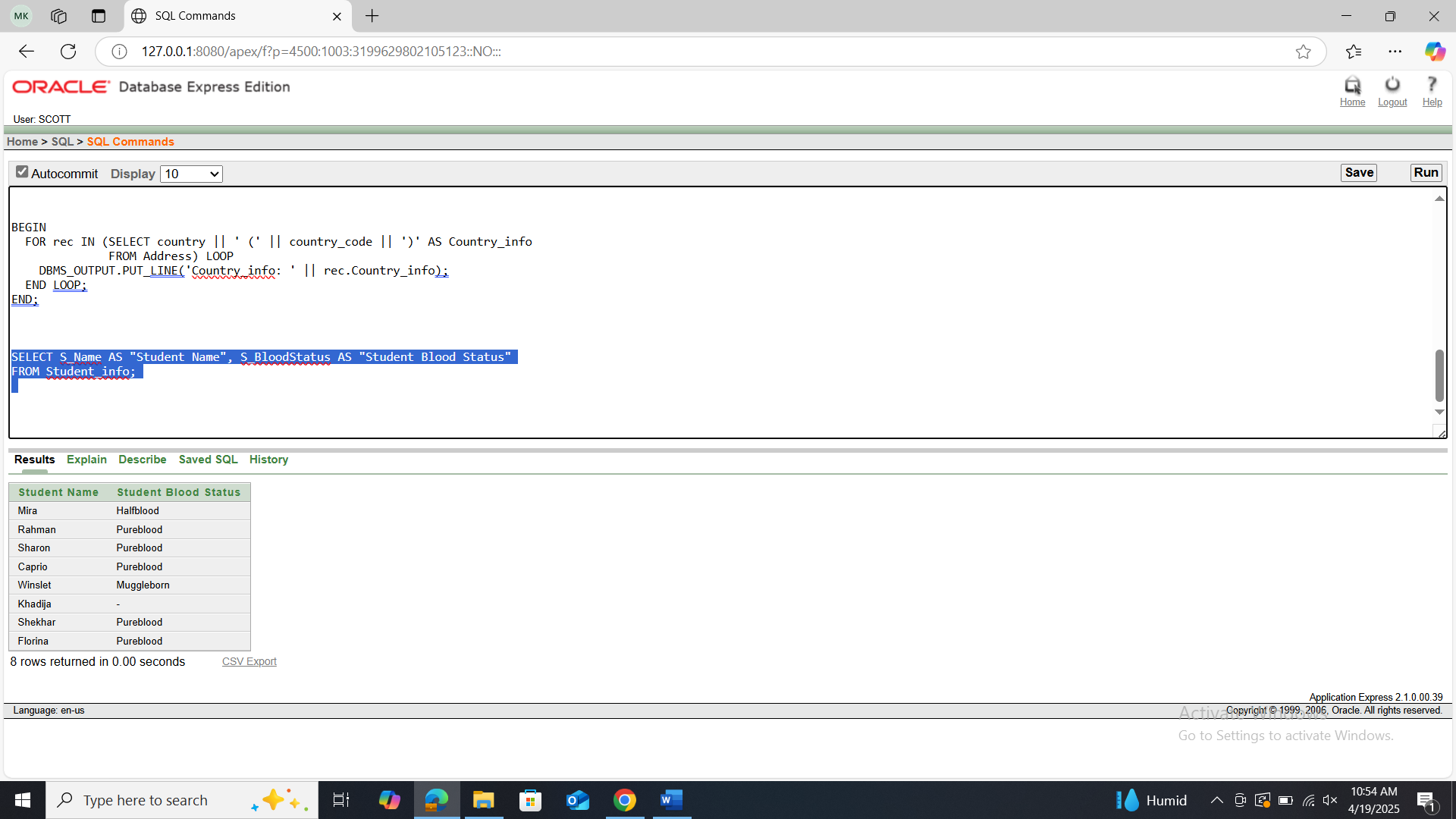


1. Display the student name and student blood status with the column name “Student Name” and “Student Blood Status” from Student\_info.

**SQL Solution:**

Query: SELECT S\_Name AS "Student Name", S\_BloodStatus AS "Student Blood Status"

FROM Student\_info;



**PL/ SQL Solution:**

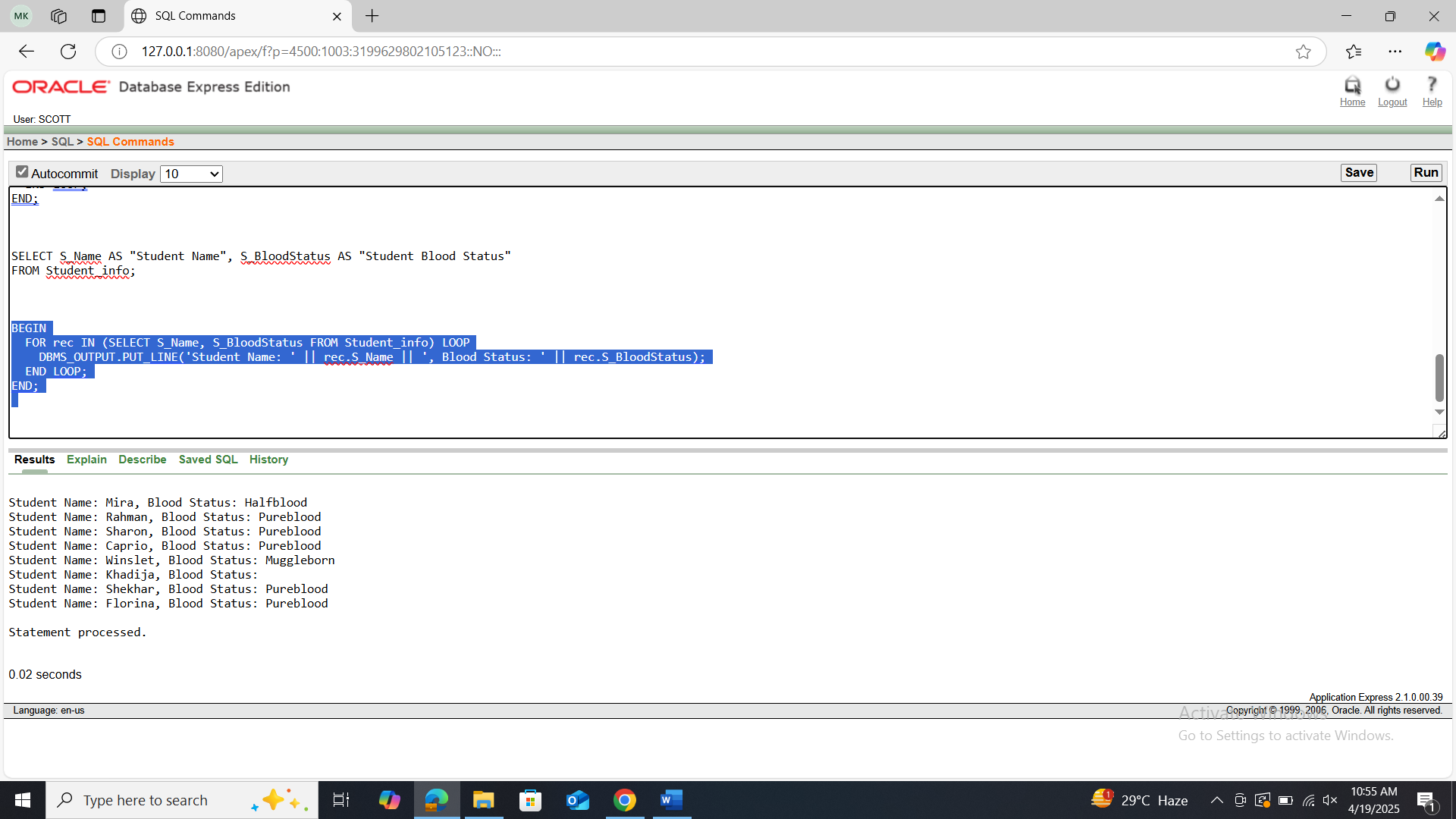
Query: BEGIN

FOR rec IN (SELECT S\_Name, S\_BloodStatus FROM Student\_info) LOOP

DBMS\_OUTPUT.PUT\_LINE('Student Name: ' || rec.S\_Name || ', Blood Status: ' || rec.S\_BloodStatus);

END LOOP;

END;



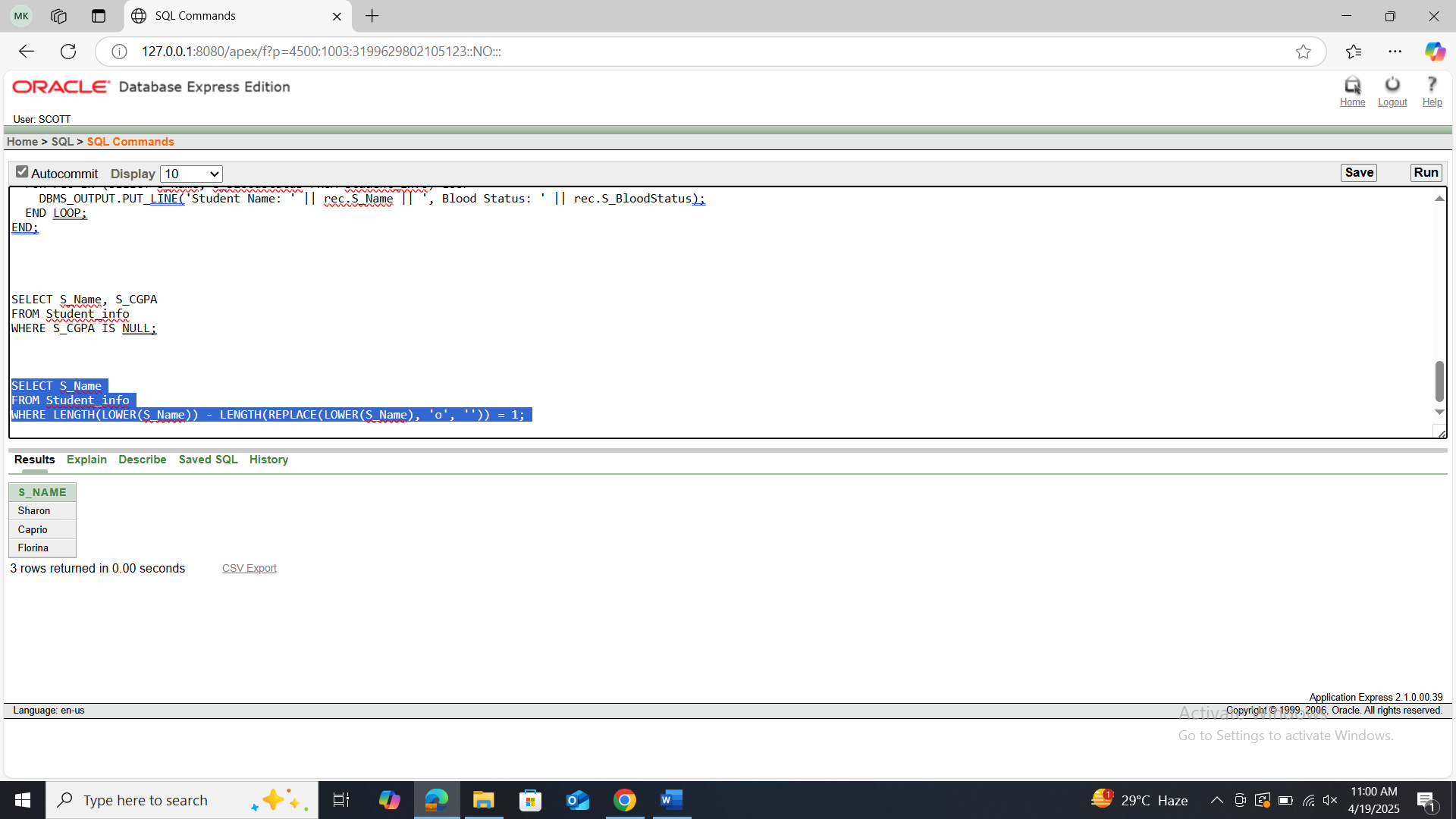
1. Display all students who have only one ‘o’ in their name.

**SQL Solution:**

Query: SELECT S\_Name

FROM Student\_info

WHERE LENGTH(LOWER(S\_Name)) - LENGTH(REPLACE(LOWER(S\_Name), 'o', '')) = 1;



**PL/SQL Solution:**

Query: BEGIN

FOR rec IN (

SELECT S\_Name

FROM Student\_info

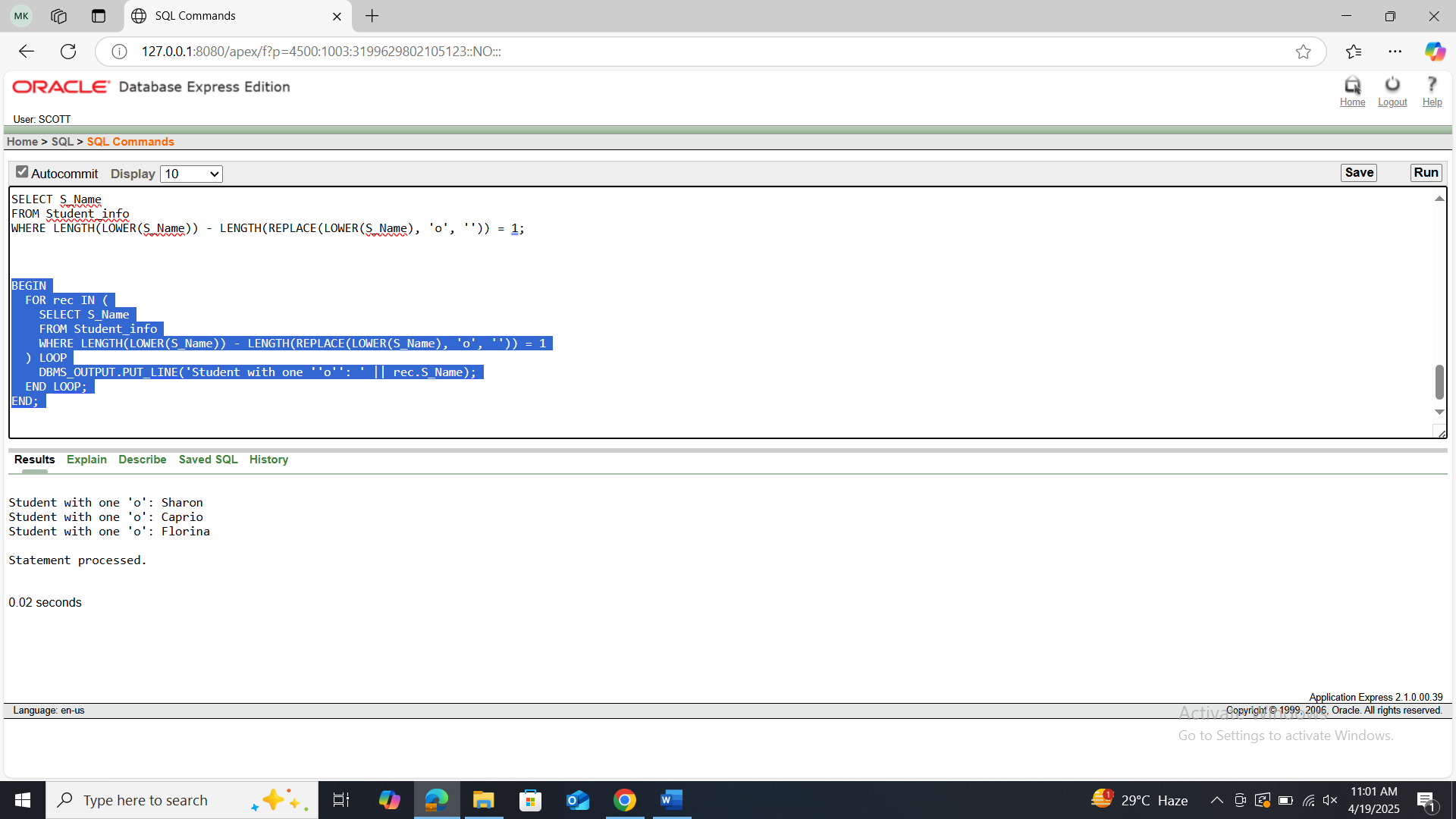
WHERE LENGTH(LOWER(S\_Name)) - LENGTH(REPLACE(LOWER(S\_Name), 'o', '')) = 1

) LOOP

DBMS\_OUTPUT.PUT\_LINE('Student with one ''o'': ' || rec.S\_Name);

END LOOP;

END;



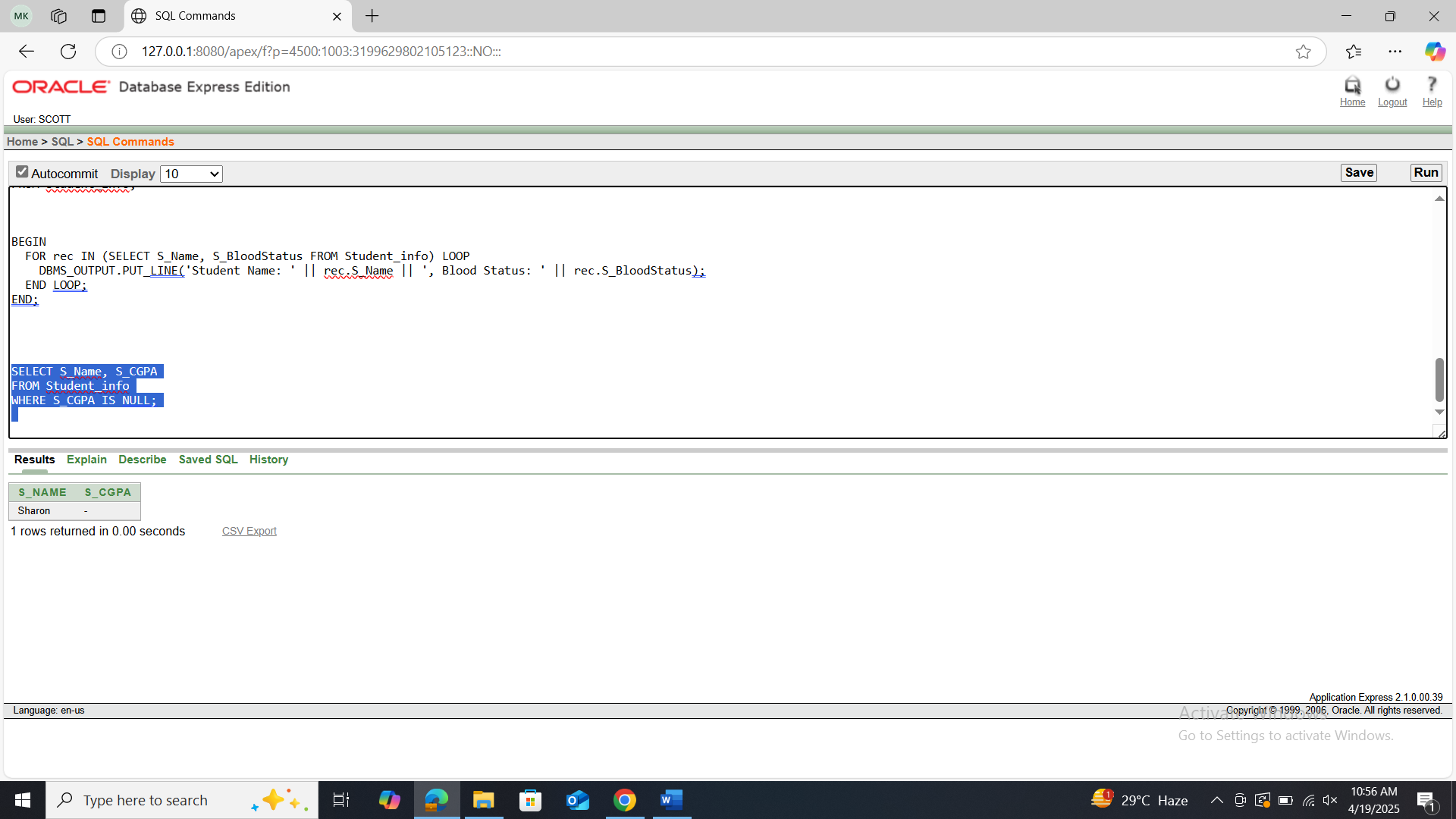
1. Display the student name , CGPA who have null value in their CGPA.

**SQL Solution:**

Query: SELECT S\_Name, S\_CGPA

FROM Student\_info

WHERE S\_CGPA IS NULL;



**PL/SQL Solution:**

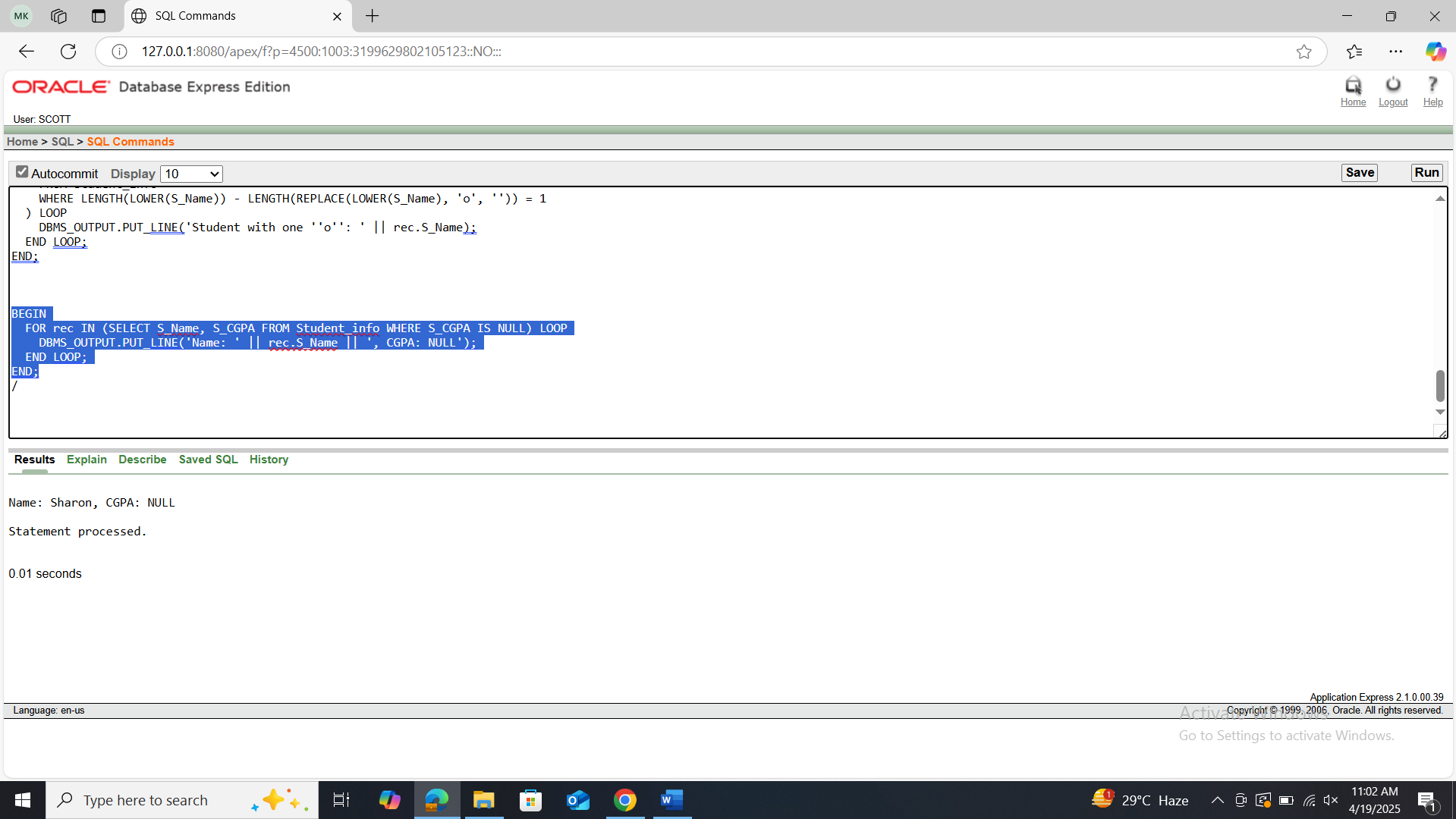
Query: BEGIN

FOR rec IN (SELECT S\_Name, S\_CGPA FROM Student\_info WHERE S\_CGPA IS NULL) LOOP

DBMS\_OUTPUT.PUT\_LINE('Name: ' || rec.S\_Name || ', CGPA: NULL');

END LOOP;

END;



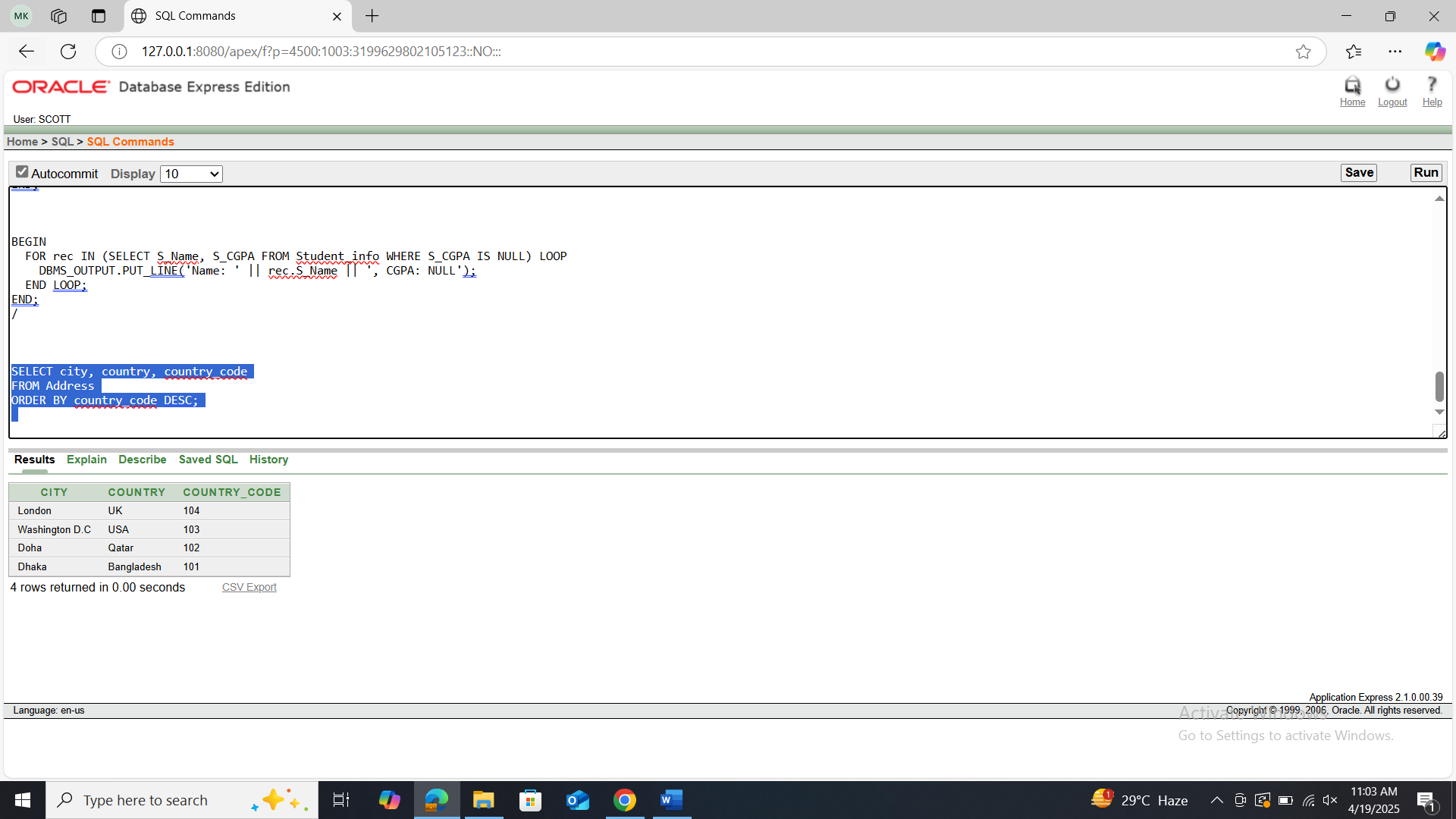
1. Display the city, country, country\_code and those must be shown from highest numbered country code to lowest numbered country code.

**SQL Solution:**

Query: SELECT city, country, country\_code

FROM Address

ORDER BY country\_code DESC;



**PL/SQL Solution:**

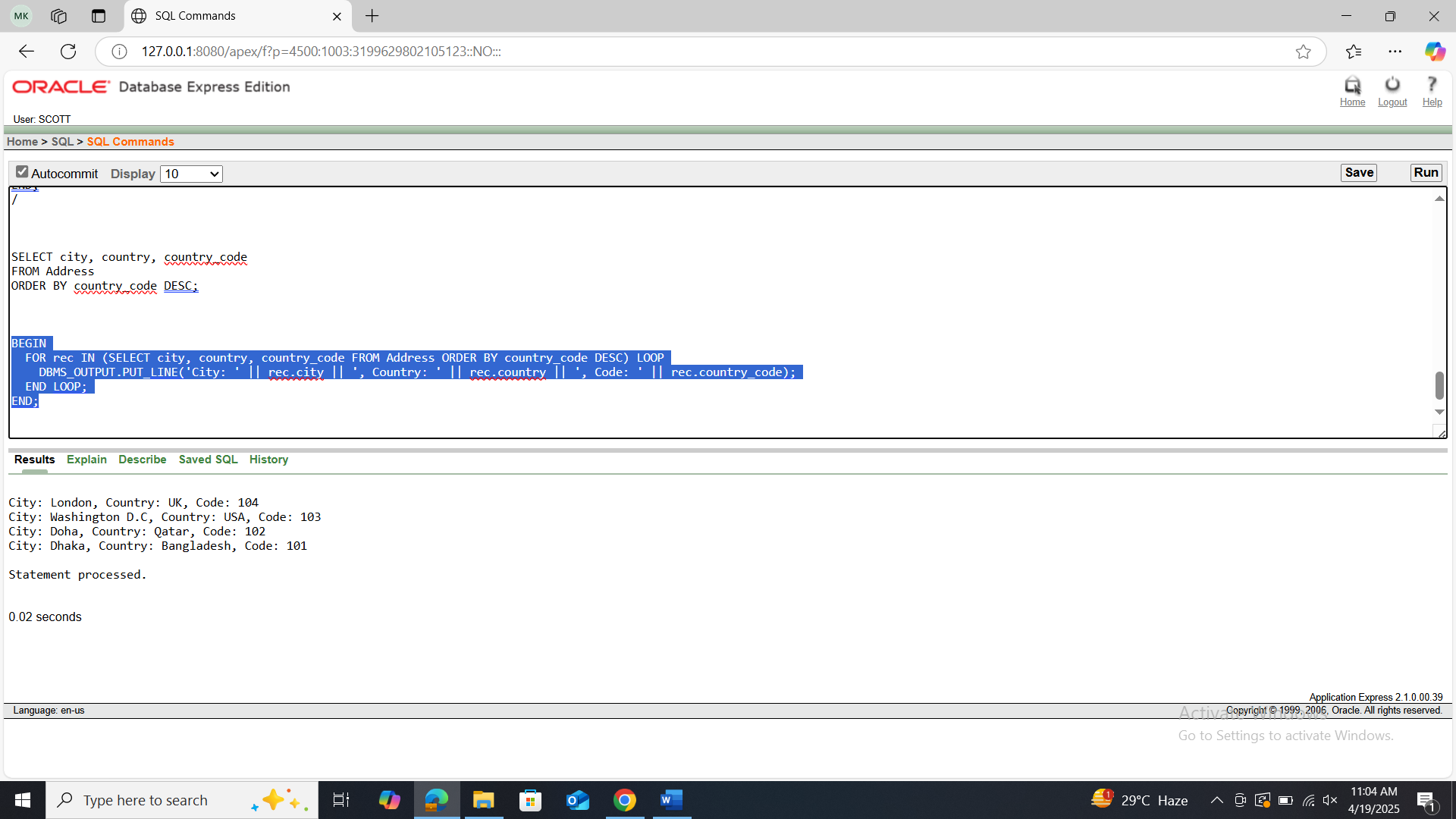
Query: BEGIN

FOR rec IN (SELECT city, country, country\_code FROM Address ORDER BY country\_code DESC) LOOP

DBMS\_OUTPUT.PUT\_LINE('City: ' || rec.city || ', Country: ' || rec.country || ', Code: ' || rec.country\_code);

END LOOP;

END;



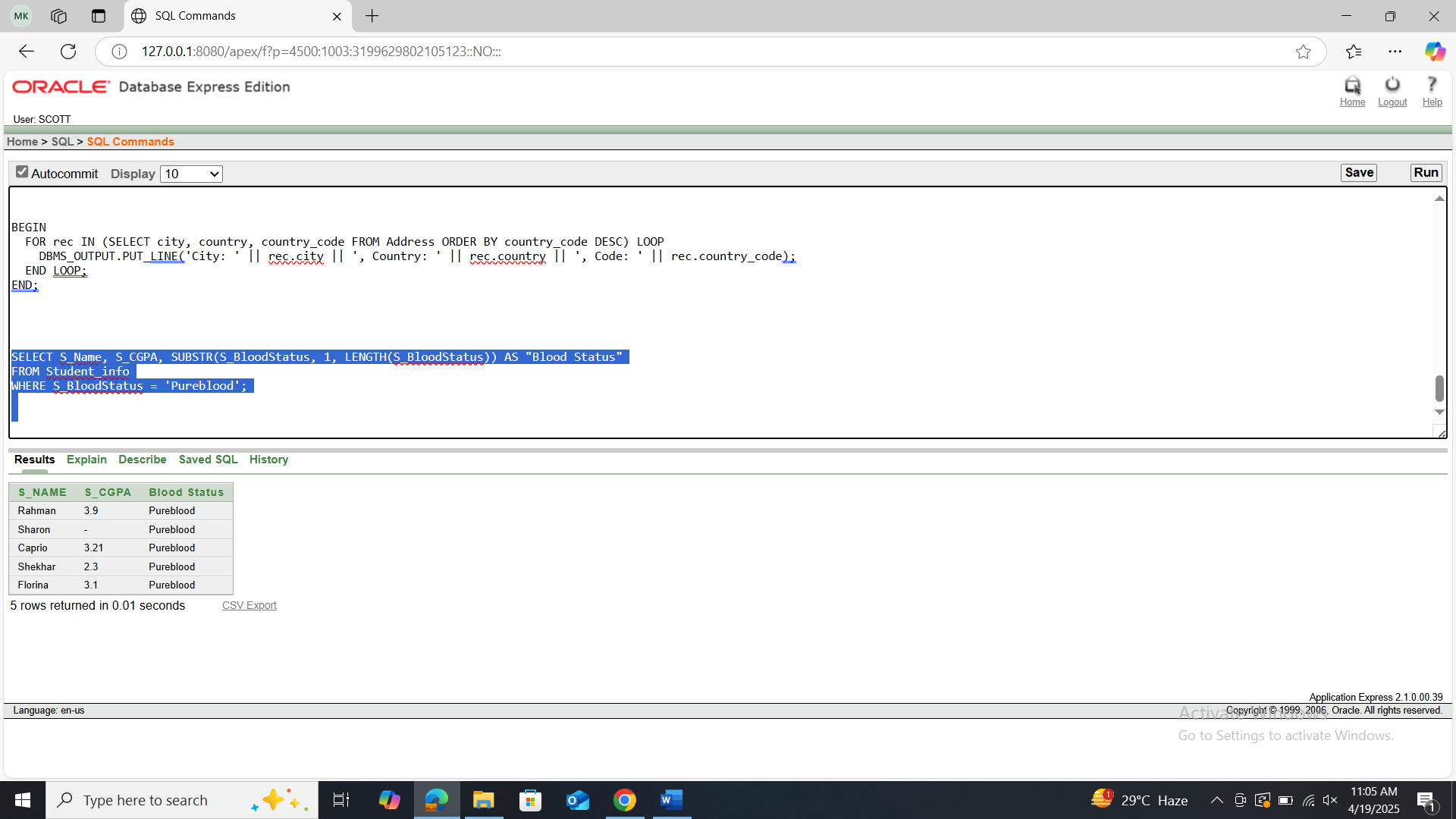
1. Display the student name, student CGPA and student blood status together where the blood status is pureblood using SUBSTR.

**SQL Solution:**

Query: SELECT S\_Name, S\_CGPA, SUBSTR(S\_BloodStatus, 1, LENGTH(S\_BloodStatus)) AS "Blood Status"

FROM Student\_info

WHERE S\_BloodStatus = 'Pureblood';



**PL/SQL Solution:**

Query: BEGIN

FOR rec IN (SELECT S\_Name, S\_CGPA, SUBSTR(S\_BloodStatus, 1, LENGTH(S\_BloodStatus)) AS BloodStatus

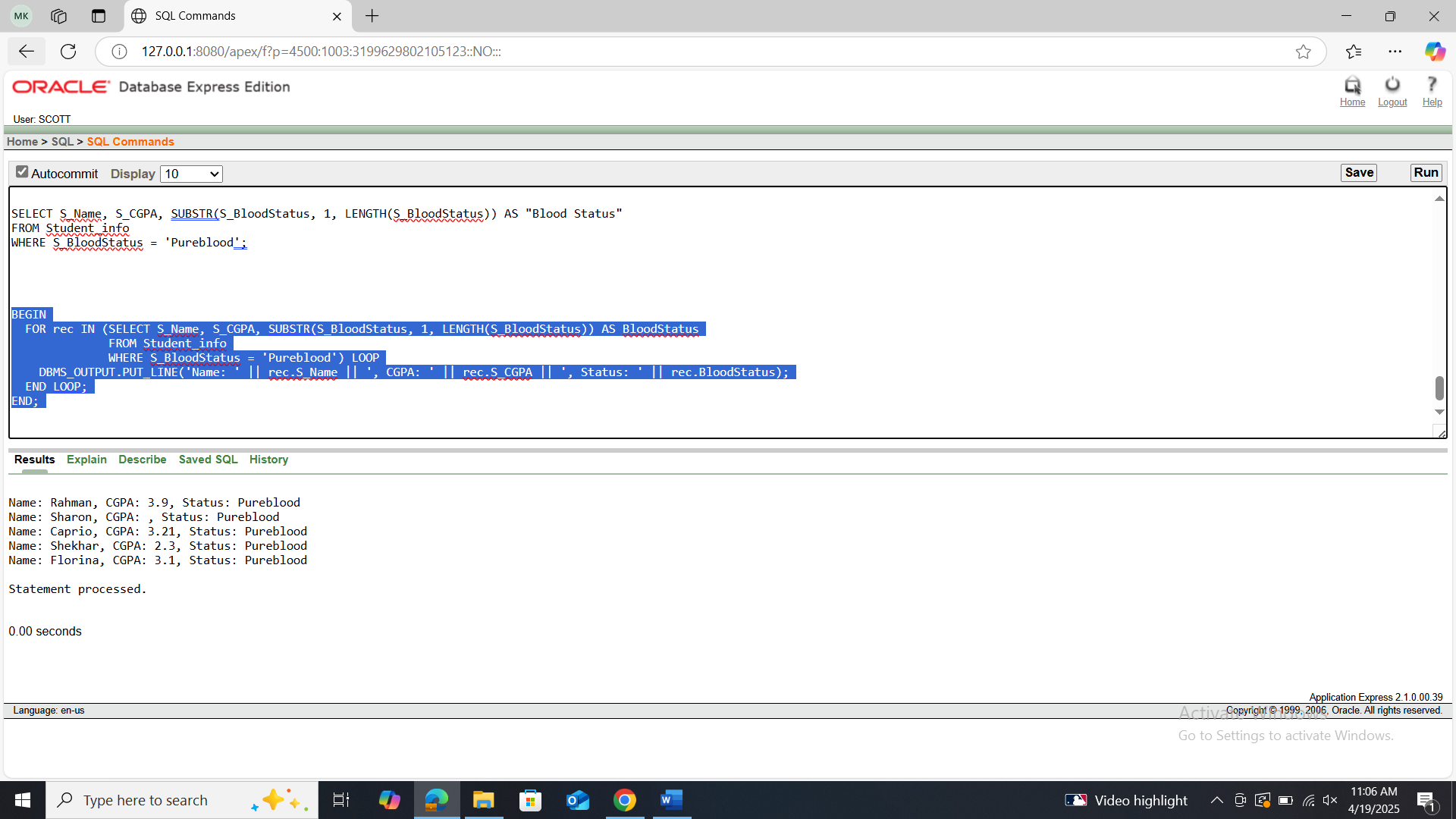
FROM Student\_info

WHERE S\_BloodStatus = 'Pureblood') LOOP

DBMS\_OUTPUT.PUT\_LINE('Name: ' || rec.S\_Name || ', CGPA: ' || rec.S\_CGPA || ', Status: ' || rec.BloodStatus);

END LOOP;

END;



1. Show all the students with their CGPA and blood status. If there is any null value use NVL function.

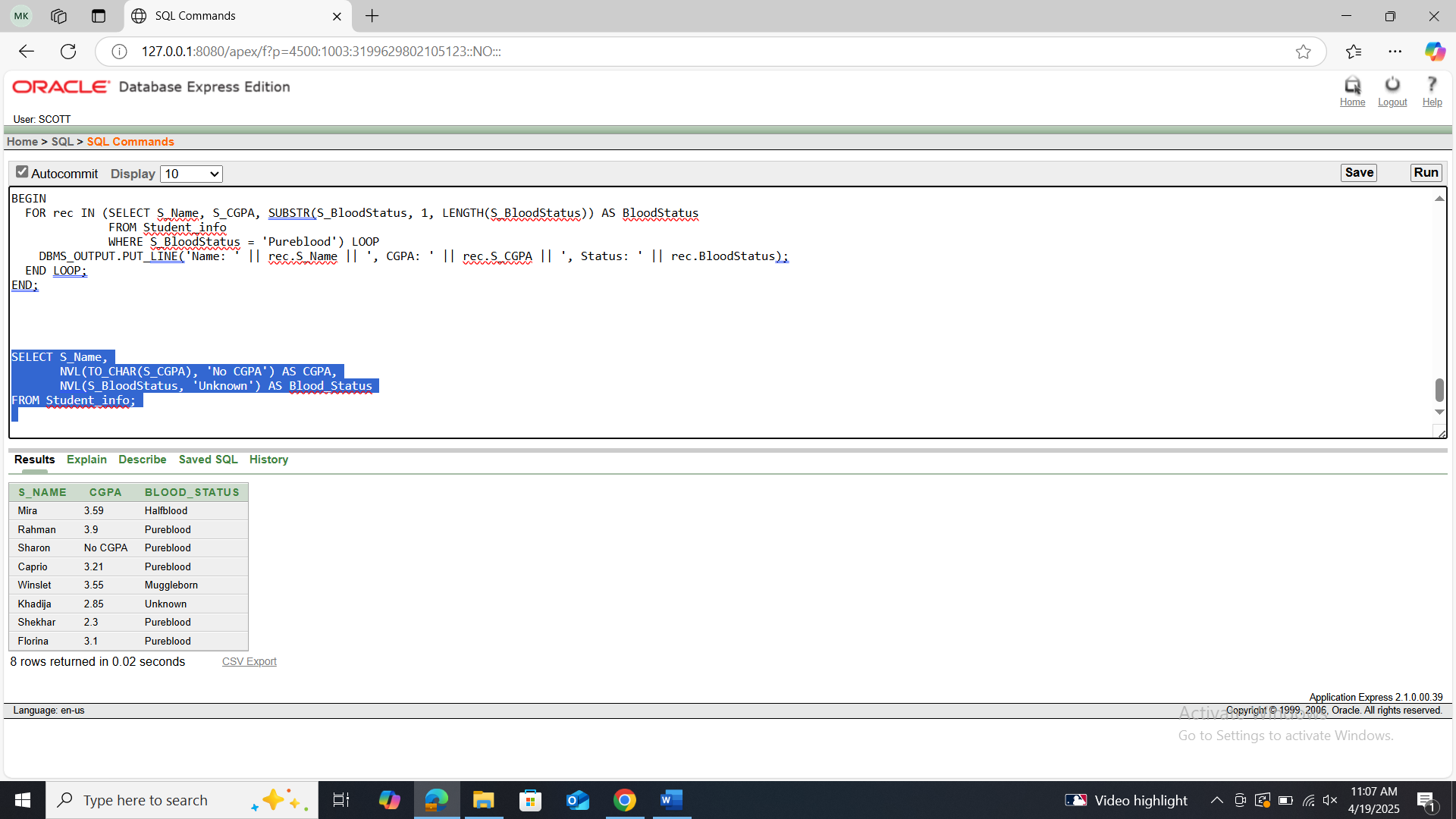
**SQL Solution:**

Query: SELECT S\_Name,

NVL(TO\_CHAR(S\_CGPA), 'No CGPA') AS CGPA,

NVL(S\_BloodStatus, 'Unknown') AS Blood\_Status

FROM Student\_info;



**PL/SQL Solution:**

Query: BEGIN

FOR rec IN (SELECT S\_Name,

NVL(TO\_CHAR(S\_CGPA), 'No CGPA') AS CGPA,

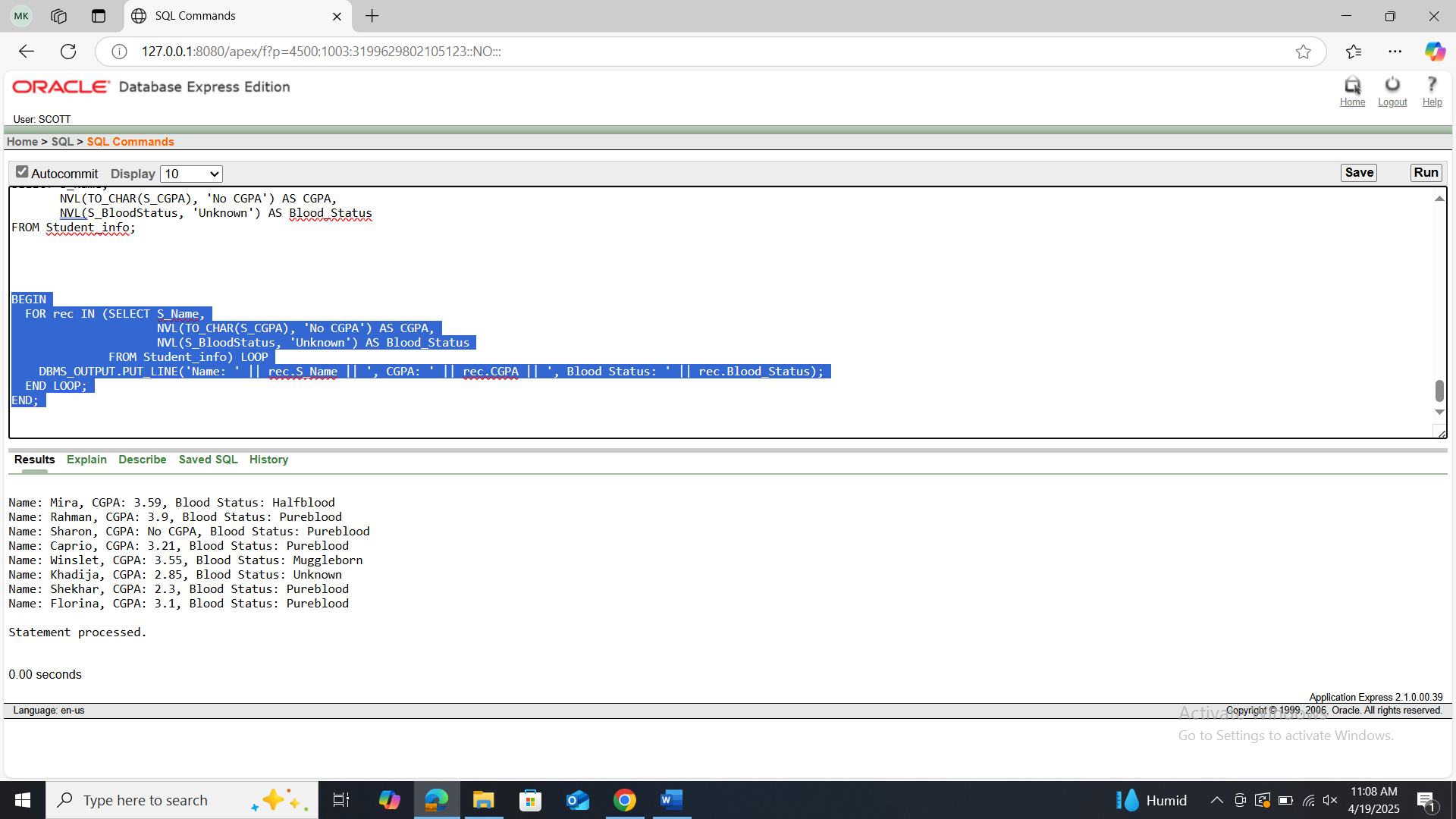
NVL(S\_BloodStatus, 'Unknown') AS Blood\_Status

FROM Student\_info) LOOP

DBMS\_OUTPUT.PUT\_LINE('Name: ' || rec.S\_Name || ', CGPA: ' || rec.CGPA || ', Blood Status: ' || rec.Blood\_Status);

END LOOP;

END;



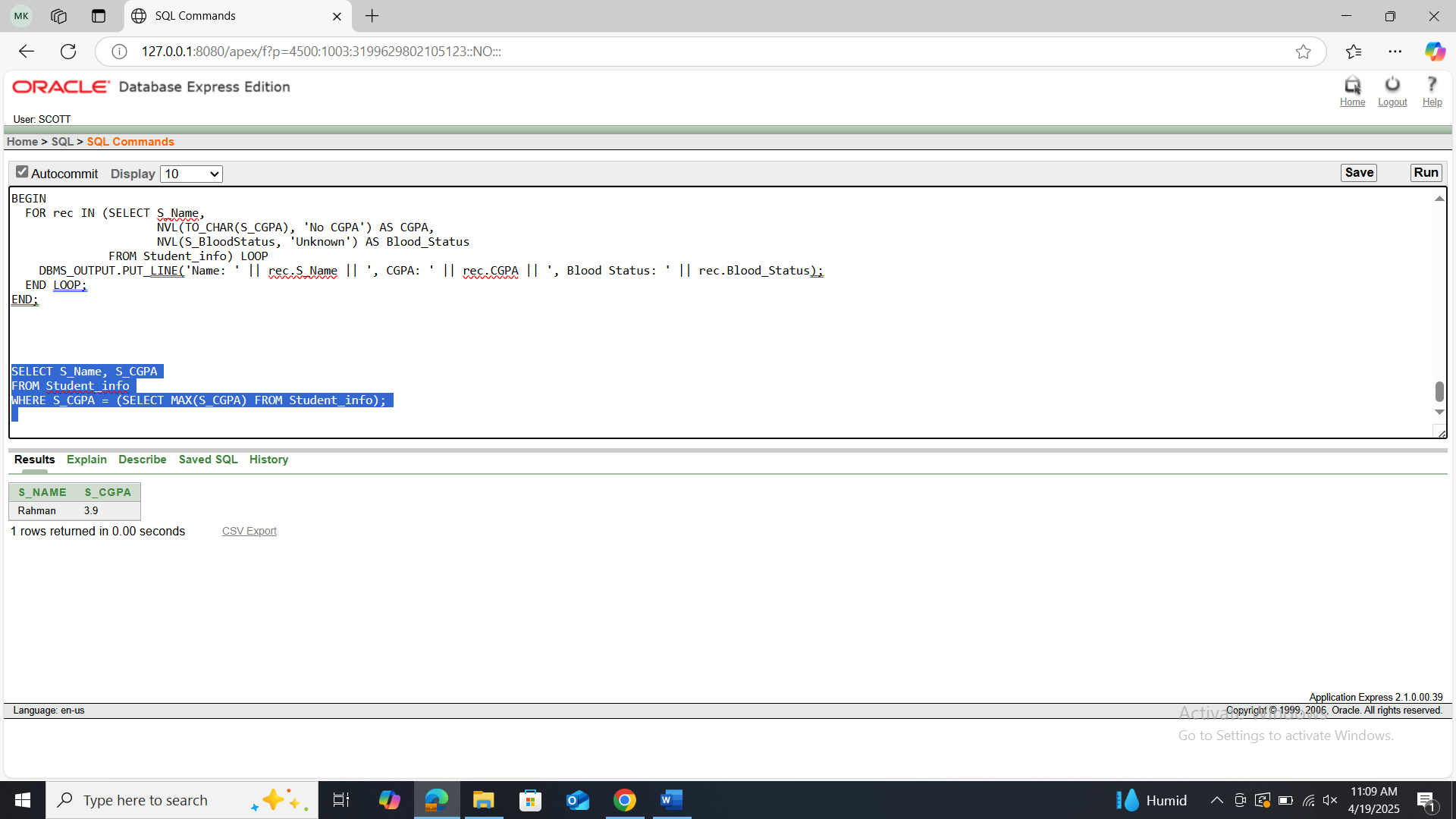
1. Find out the student who is holding maximum CGPA.

**SQL Solution:**

Query: SELECT S\_Name, S\_CGPA

FROM Student\_info

WHERE S\_CGPA = (SELECT MAX(S\_CGPA) FROM Student\_info);



**PL/SQL Solution:**

Query: DECLARE

max\_cgpa Student\_info.S\_CGPA%TYPE;

BEGIN

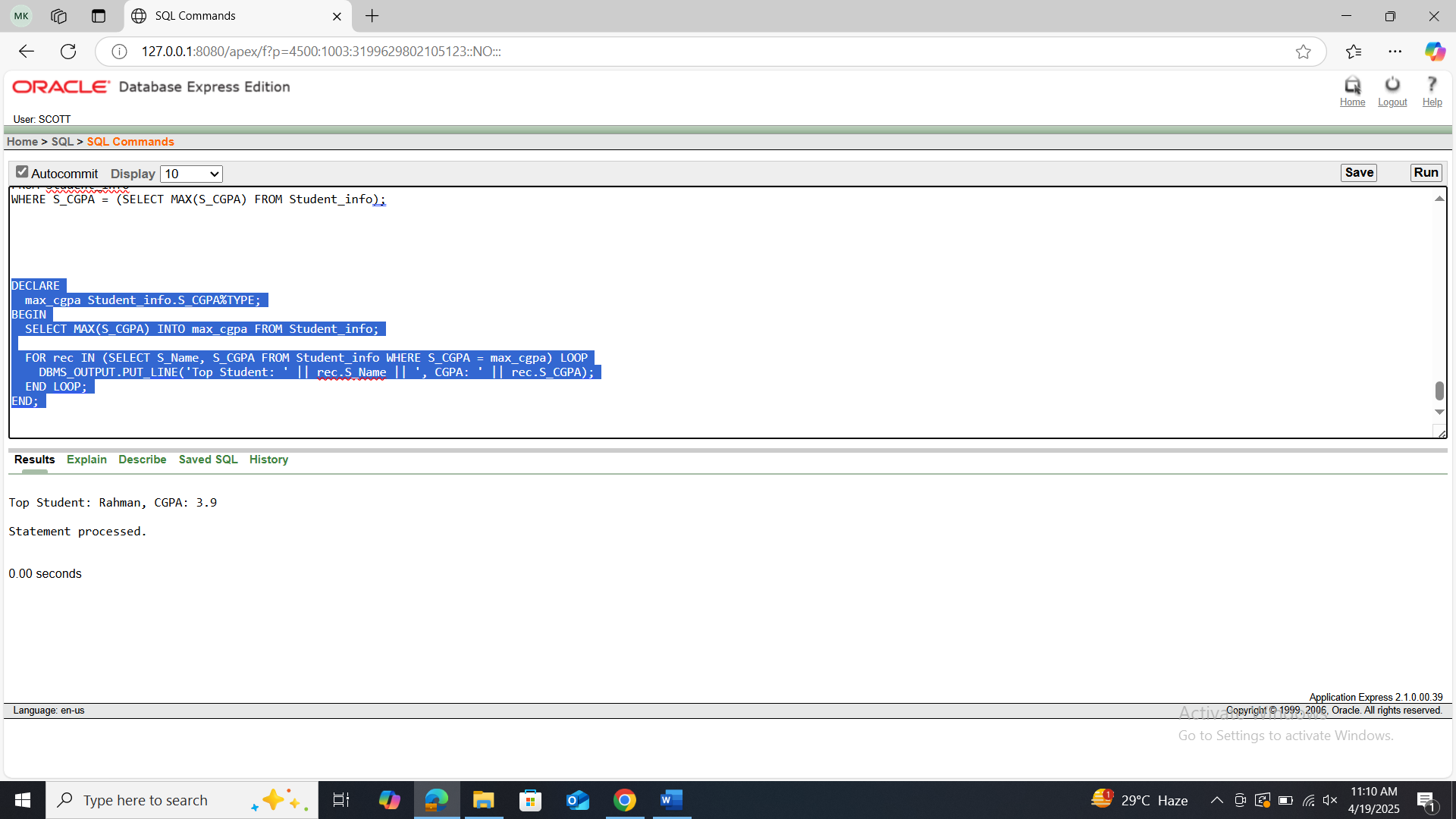
SELECT MAX(S\_CGPA) INTO max\_cgpa FROM Student\_info;

FOR rec IN (SELECT S\_Name, S\_CGPA FROM Student\_info WHERE S\_CGPA = max\_cgpa) LOOP

DBMS\_OUTPUT.PUT\_LINE('Top Student: ' || rec.S\_Name || ', CGPA: ' || rec.S\_CGPA);

END LOOP;

END;



**\*\*Solve the above questions (1 to 9) with SQL. Afterwards solve the same questions with PL/SQL. Write down the answer and give screenshot of the results of the query in a MS Word document. You must use Oracle 10g.The name of the document MUST be your ID (solutions MUST be numbered accordingly) and upload it in the provided link in your VUES account**