Name: Samriddhi Verma
Reg.No.: 16BCE1375

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Programme	:	**B.Tech - CSE**	Semester	:	**Winter 18 - 19**
Course	:	**Database Management Systems (Embedded Lab)**	Code	:	**CSE2004**
Faculty	:	**Prof. A. Vijayalakshmi** **Prof. M. Premalatha**	Slot	:	**L3 + L4**

Ex. No: 9
18-03-19

PL-SQL Procedures and Functions

For the already created table of student schema,

Student(regno, name, cgpa)

```
SQL> create table student(regno varchar(5),name char(10),cgpa
number(4,2),constraint pk_reg primary key(regno));

Table created.
```

Course(ccode, cname, credits)

```
SQL> create table course(ccode varchar(5),cname char(10),credits
number(4,2),constraint pk_code primary key(ccode));

Table created.
```

Student_course(regno, ccode)

```
SQL> create table student_course(regno varchar(5),ccode
varchar(5),constraint fk_reg foreign key(regno) references
student,constraint fk_code foreign key(ccode)references course);

Table created.
```

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```
SQL> desc student;

 Name                                      Null?    Type

 ----------------------------------------- -------- ----------------
REGNO                                     NOT NULL VARCHAR2(5)

 NAME                                               CHAR(10)

 CGPA                                               NUMBER(4,2)

SQL> desc course;

 Name                                      Null?    Type

 ----------------------------------------- -------- ------------------
CCODE                                     NOT NULL VARCHAR2(5)

 CNAME                                              CHAR(10)

 CREDITS                                            NUMBER(4,2)

SQL> desc student_course;

 Name                                      Null?    Type

 ----------------------------------------- -------- ------------------
REGNO                                              VARCHAR2(5)

 CCODE                                              VARCHAR2(5)
```

1. **Write a PL/SQL procedure to update the cgpa of the student with regno 101.**

```
SQL> create or replace procedure pro_insert(x1 varchar,x2 char,x3
number) as
  2  regno varchar(5);
  3  name char(10);
  4  cgpa number(4,2);
  5  Begin
  6  regno:=x1;
  7  name:=x2;
  8  cgpa:=x3;
  9  insert into student values(regno,name,cgpa);
 10  dbms_output.put_line('Record Inserted');
```

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```
11  end;
 12  /

Procedure created.

SQL> begin
  2  pro_insert('101','Sam',9.1);
  3  end;
  4  /

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_insert('102','Simran',8.7);
  3  end;
  4  /

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_insert('103','Alia',7.8);
  3  end;
  4  /

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_insert('104','Rick',8.1);
  3  end;
  4  /

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_insert('105','Nick',6.4);
  3  end;
  4  /
```

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Inserting into course schema:

```
SQL> create or replace procedure pro_in(x1 varchar,x2 char,x3 number)
as
  2  ccode varchar(5);
  3  cname char(10);
  4  credits number(4);
  5  begin
  6  ccode:=x1;
  7  cname:=x2;
  8  credits:=x3;
  9  insert into course values(ccode,cname,credits);
 10  dbms_output.put_line('Record Inserted');
 11  end;
 12  /

Procedure created.

SQL> begin
  2  pro_in('CS104','DLD',4);
  3  end;
  4  /
Record Inserted

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_in('CS204','DBMS',4);
  3  end;
  4  /
Record Inserted

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_in('PHY01','Physics',5);
```

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```
  3  end;
  4  /
Record Inserted
PL/SQL procedure successfully completed.
SQL> begin
  2  pro_in('HUM39','Ethics',3);
  3  end;
  4  /
Record Inserted
PL/SQL procedure successfully completed.
SQL> begin
  2  pro_in('CS403','ML',4);
  3  end;
  4  /
Record Inserted
PL/SQL procedure successfully completed.
SQL> begin
  2  pro_in('CS309','AI',4);
  3  end;
  4  /
Record Inserted
PL/SQL procedure successfully completed.
```

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2. **Write a function to find the maximum cgpa of all the students.**

```
SQL> set serveroutput on

SQL> declare

  2  max_cgpa number(4,2);

  3  begin

  4  select max(cgpa) into max_cgpa from student;

  5  dbms_output.put_line('The maximum cgpa among all the students is:
'|| max_cgpa);

  6  end;

  7  /

The maximum cgpa among all the students is: 9.1

PL/SQL procedure successfully completed.
```

3. **Insert a column named marks in student_course relation and update the column values.**

Insert into student_course:

```
SQL> create or replace procedure pro_inst(x1 varchar,x2 varchar) as
  2  regno varchar(5);
  3  ccode varchar(5);
  4  begin
  5  regno:=x1;
  6  ccode:=x2;
  7  insert into student_course values(regno,ccode);
  8  dbms_output.put_line('Record Inserted');
  9  end;
 10  /
Procedure created.
SQL> begin
  2  pro_inst('101','CS204');
  3  end;
  4  /
Record Inserted

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_inst('101','CS309');
  3  end;
  4  /
Record Inserted

PL/SQL procedure successfully completed.

SQL> begin
```

```
  2  pro_inst('102','CS403');
  3  end;
  4  /
Record Inserted

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_inst('103','PHY01');
  3  end;
  4  /
Record Inserted

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_inst('104','HUM39');
  3  end;
  4  /
Record Inserted

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_inst('104','CS104');
  3  end;
  4  /
Record Inserted

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_inst('104','CS204');
  3  end;
  4  /
Record Inserted

PL/SQL procedure successfully completed.
```

Adding marks column into student_course:

```
SQL> alter table student_course add marks number(4);

Table altered.

SQL> create or replace procedure pro_update(x1 varchar,x2 varchar,x3
number) as
  2  regno varchar(5);
  3  ccode varchar(5);
  4  marks number(4);
  5  begin
  6  regno:=x1;
```

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```
  7  ccode:=x2;
  8   marks:=x3;
  9   insert into student_course values(regno,ccode,marks);
 10   dbms_output.put_line('Record Inserted');
 11   end;
 12  /

Procedure created.

SQL> begin
  2  pro_update('101','CS204',92);
  3  end;
  4  /
Record Inserted

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_update('101','CS309',87);
  3  end;
  4  /
Record Inserted

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_update('102','CS403',78);
  3  end;
  4  /
Record Inserted

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_update('103','PHY01',65);
  3  end;
  4  /
Record Inserted

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_update('104','HUM39',83);
  3  end;
  4  /
Record Inserted

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_update('104','CS104',90);
  3  end;
```

```
  4  /
Record Inserted

PL/SQL procedure successfully completed.

SQL> begin
  2  pro_update('104','CS204',73);
  3  end;
  4  /
Record Inserted.
```

4. **Get the marks of the regno 102 and display his grade.**

```
SQL> set serveroutput on
SQL> declare
  2  get_marks number(4,2);
  3  begin
  4  select marks into get_marks from student_course where
regno='102';
  5  dbms_output.put_line('The marks obtained are: '|| get_marks);
  6  if (get_marks<=90) then
  7     dbms_output.put_line('Grade is:  A' );
  8  elseif (get_marks<=80) then
  9     dbms_output.put_line('Grade is:  B' );
 10  elseif (get_marks<=70) then
 11     dbms_output.put_line('Grade is:  C' );
 12  elseif (get_marks<=60) then
 13     dbms_output.put_line('Grade is:  D' );
 14  else dbms_output.put_line('Grade is: F');
 15  end if;
 16  end;
 17  /
Grade is: B

PL/SQL procedure successfully completed.
```