



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

18CSC303J – DATABASE MANAGEMENT SYSTEM

LAB REPORT

SEMESTER VI

SUBMITTED BY

NAME : AKSHAT AGARWAL

REGISTER NO. : RA1911003010646

SECTION : CSE B2

Index

S. No.	Name of the Experiment	Page No.	Date of Experiment	Date of Submission	Remarks
1.	Study of Basic SQL Commands		13/01/22	13/01/22	Done in GCR
2.	Study of DDL and DML Commands		24/01/22	24/01/22	Done in GCR
3.	(a) Study of DCL Commands (b) Study of aggregation and SQL Clauses		01/02/22 01/02/22	01/02/22 01/02/22	Done in GCR
4.	SQL built-in functions		08/02/22	08/02/22	Done in GCR
5.	Study of Constraints		15/02/22	15/02/22	Done in GCR
6.	Study of View in SQL		22/02/22	22/02/22	Done in GCR
7.	Study of Join and set operation.		08/03/22	08/03/22	Done in GCR
8.	Study of Triggers in PL/SQL	1-2	15/03/22	12/04/22	Done Major
9.	Study of cursors in PL/SQL	3-5	5/04/22	12/04/22	Done Major
10.	PL/SQL Procedures	6-7	5/04/22	12/04/22	Done Major

Experiment No – 1

Code :

```
SQL*Plus: Release 19.0.0.0.0 - Production on Thu Jan 13 14:19:37 2022
Version 19.8.0.0.0

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Last Successful login time: Thu Jan 13 2022 14:09:13 +05:30

Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.13.0.0.0

SQL> create table srm(rno varchar(5), name varchar(25), marks varchar(5));

Table created.

SQL> desc srm;
Name          Null?    Type
-----        -----   -----
RNO           VARCHAR2(5)
NAME          VARCHAR2(25)
MARKS         VARCHAR2(5)

SQL> insert into srm values('646','akshat','85');

1 row created.

SQL> insert into srm values('641','anish','90');

1 row created.

SQL> insert into srm values('649','shubham','100');

1 row created.

SQL> select * from srm;

RNO    NAME      MARKS
-----  -----
646    akshat    85
641    anish     90
649    shubham   100

SQL> update srm set marks='90' where rno='649';
```

1 row updated.

SQL> select * from srm;

RNO	NAME	MARKS
646	akshat	85
641	anish	90
649	shubham	90

SQL> delete from srm where rno='641';

1 row deleted.

SQL> select * from srm;

RNO	NAME	MARKS
646	akshat	85
649	shubham	90

Experiment No – 2

DML Commands

- INSERT – To insert records in the table
- UPDATE – To update the records in the existing database
- DELETE – To delete specific records from the table

DDL Commands

- CREATE – Create an object.
- DROP – This SQL DDL command helps to delete objects.
- ALTER – Used to alter the existing database or its object structures.
- TRUNCATE – This SQL DDL command removes records from tables.

Code :

```
SQL*Plus: Release 19.0.0.0.0 - Production on Mon Jan 24 14:13:50 2022
Version 19.8.0.0.0
```

```
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```

```
Last Successful login time: Mon Jan 24 2022 14:03:55 +05:30
```

```
Connected to:
```

```
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.13.0.0.0
```

```
SQL> create table cse(rno varchar(3), name varchar(25), marks varchar(3));
```

```
Table created.
```

```
SQL> desc cse;
```

Name	Null?	Type
------	-------	------

RNO		VARCHAR2(3)
NAME		VARCHAR2(25)
MARKS		VARCHAR2(3)

```
SQL> insert into cse('646','akshat','90');
insert into cse('646','akshat','90')
```

```
*
```

```
ERROR at line 1:
ORA-00928: missing SELECT keyword
```

```

SQL> insert into cse values('646','akshat','90');
1 row created.

SQL> insert into cse values('649','shubham','95');
1 row created.

SQL> insert into cse values('641','anish','93');
1 row created.

SQL> insert into cse values('633','amit','100');
1 row created.

SQL> select * from cse;
RNO NAME          MAR
--- -----
646 akshat        90
649 shubham       95
641 anish         93
633 amit          100

SQL> update cse set marks='95' where rno='646';
1 row updated.

SQL> select * from cse;
RNO NAME          MAR
--- -----
646 akshat        95
649 shubham       95
641 anish         93
633 amit          100

SQL> delete from cse where rno='649';
1 row deleted.

SQL> select * from cse;
RNO NAME          MAR
--- -----
646 akshat        95
641 anish         93
633 amit          100

SQL> alter table cse add (contact number(10));
Table altered.

SQL> desc cse;
Name           Null?    Type
--- -----
RNO           VARCHAR2(3)
NAME          VARCHAR2(25)

```

```
MARKS          VARCHAR2(3)
CONTACT        NUMBER(10)
```

```
SQL> alter table cse drop(contact);
```

```
Table altered.
```

```
SQL> desc cse;
```

Name	Null?	Type
------	-------	------

RNO		VARCHAR2(3)
NAME		VARCHAR2(25)
MARKS		VARCHAR2(3)

```
SQL> truncate table cse;
```

```
Table truncated.
```

```
SQL> select * from cse;
```

```
no rows selected
```

```
SQL> drop table cse;
```

```
Table dropped.
```

```
SQL> select * from cse;
```

```
select * from cse
```

```
*
```

```
ERROR at line 1:
```

```
ORA-00942: table or view does not exist
```

Experiment No – 3 (A)

AGGREGATION Commands

- SUM
- COUNT
- AVG
- MIN
- MAX

SQL CLAUSES

- GROUP BY
- ORDER BY
- HAVING

Code :

```
SQL*Plus: Release 19.0.0.0.0 - Production on Tue Feb 1 14:12:55 2022
Version 19.8.0.0.0
```

```
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```

```
Last Successful login time: Tue Feb 01 2022 14:09:25 +05:30
```

```
Connected to:
```

```
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.13.0.0.0
```

```
SQL> create table cse(rno number(3),name varchar(25),marks number(3));
```

```
Table created.
```

```
SQL> desc cse;
```

Name	Null?	Type
------	-------	------

RNO	NUMBER(3)
-----	-----------

NAME	VARCHAR2(25)
MARKS	NUMBER(3)

```
SQL> insert into cse values(646,'akshat',90);
```

```
1 row created.
```

```
SQL> insert into cse values(649,'shubham',85);
```

```
1 row created.
```

```
SQL> insert into cse values(633,'amit',95);
```

```
1 row created.
```

```
SQL> select * from cse;
```

RNO	NAME	MARKS
646	akshat	90
649	shubham	85
633	amit	95

```
SQL> savepoint s1;
```

```
Savepoint created.
```

```
SQL> insert into cse values(677,'xyz',100);
```

```
1 row created.
```

```
SQL> select * from cse;
```

RNO	NAME	MARKS
646	akshat	90
649	shubham	85
633	amit	95
677	xyz	100

```
SQL> select count(*) from cse;
```

COUNT(*)
4

```
SQL> select min(marks) from cse;
```

MIN(MARKS)
85

```
SQL> select max(marks) from cse;
```

```
MAX(MARKS)
```

```
-----  
100
```

```
SQL> select avg(marks) from cse;
```

```
AVG(MARKS)
```

```
-----  
92.5
```

```
SQL> select sum(marks) from cse;
```

```
SUM(MARKS)
```

```
-----  
370
```

```
SQL> alter table cse add(dept varchar(20));
```

```
Table altered.
```

```
SQL> desc cse;
```

Name	Null?	Type
------	-------	------

RNO		NUMBER(3)
NAME		VARCHAR2(25)
MARKS		NUMBER(3)
DEPT		VARCHAR2(20)

```
SQL> select * from cse;
```

RNO	NAME	MARKS	DEPT
646	akshat	90	
649	shubham	85	
633	amit	95	
677	xyz	100	

```
SQL> update cse set dept='cse';
```

```
4 rows updated.
```

```
SQL> update cse set dept='ECE' where name='xyz';
```

```
1 row updated.
```

```
SQL> select * from cse;
```

RNO	NAME	MARKS	DEPT
646	akshat	90	cse
649	shubham	85	cse
633	amit	95	cse
677	xyz	100	ECE

```
SQL> select * from cse order by name;
```

RNO	NAME	MARKS	DEPT
-----	------	-------	------

```
-----  
646 akshat          90 cse  
633 amit            95 cse  
649 shubham         85 cse  
677 xyz             100 ECE
```

```
SQL> select * from cse order by name desc;
```

RNO	NAME	MARKS	DEPT
677	xyz	100	ECE
649	shubham	85	cse
633	amit	95	cse
646	akshat	90	cse

```
SQL> select count(name),dept from cse group by dept;
```

```
COUNT(NAME) DEPT
```

3	cse
1	ECE

```
SQL> select dept,count(*) from cse group by dept having count(*)>2;
```

DEPT	COUNT(*)
cse	3

```
SQL>
```

Experiment No – 3 (B)

DCL Commands

- SAVEPOINT – To make a instance of the table which when called will be reverted back to.
- ROLLBACK – To rollback to the specified savepoint
- COMMIT – To commit the changes made in table

Code :

```
SQL*Plus: Release 19.0.0.0.0 - Production on Tue Feb 1 14:12:55 2022
Version 19.8.0.0.0
```

```
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```

```
Last Successful login time: Tue Feb 01 2022 14:09:25 +05:30
```

```
Connected to:
```

```
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.13.0.0.0
```

```
SQL> create table cse(rno number(3),name varchar(25),marks number(3));
```

```
Table created.
```

```
SQL> desc cse;
```

Name	Null?	Type
RNO		NUMBER(3)
NAME		VARCHAR2(25)
MARKS		NUMBER(3)

```
SQL> insert into cse values(646,'akshat',90);  
1 row created.
```

```
SQL> insert into cse values(649,'shubham',85);  
1 row created.
```

```
SQL> insert into cse values(633,'amit',95);  
1 row created.
```

```
SQL> select * from cse;
```

RNO	NAME	MARKS
646	akshat	90
649	shubham	85
633	amit	95

```
SQL> savepoint s1;
```

```
Savepoint created.
```

```
SQL> insert into cse values(677,'xyz',100);  
1 row created.
```

```
SQL> select * from cse;
```

RNO	NAME	MARKS
646	akshat	90
649	shubham	85
633	amit	95
677	xyz	100

```
SQL> rollback to s1;
```

```
Rollback complete.
```

```
SQL> select * from cse;
```

RNO	NAME	MARKS
646	akshat	90
649	shubham	85
633	amit	95

```
SQL> insert into cse values(677,'xyz',100);  
1 row created.
```

```
SQL> commit;
```

```
Commit complete.
```

```
SQL> rollback to s1;
rollback to s1
*
ERROR at line 1:
ORA-01086: savepoint 'S1' never established in this session or is invalid
```

Experiment No – 4

Code :

```
SQL*Plus: Release 19.0.0.0.0 - Production on Tue Feb 8 14:03:45 2022
Version 19.8.0.0.0
```

```
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```

```
Last Successful login time: Tue Feb 01 2022 14:28:00 +05:30
```

```
Connected to:
```

```
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.13.0.0.0
```

```
SQL> select * from cse;
```

RNO	NAME	MARKS	DEPT
646	akshat	90	
649	shubham	85	
633	amit	95	
677	xyz	100	

```
SQL> select concat(rno,name) as details from cse;
```

```
DETAILS
```

```
646akshat
649shubham
633amit
677xyz
```

```
SQL> select initcap(name) from cse;
```

```
INITCAP(NAME)
```

```
Akshat
Shubham
Amit
Xyz
```

```
SQL> select length('0000') from dual;
LENGTH('0000')
-----
4

SQL> select length(name) from cse;
LENGTH(NAME)
-----
6
7
4
3

SQL> select dcos(90) from dual;
select dcos(90) from dual
*
ERROR at line 1:
ORA-00904: "DCOS": invalid identifier

SQL> select cosd(90) from dual;
select cosd(90) from dual
*
ERROR at line 1:
ORA-00904: "COSD": invalid identifier

SQL> select cos(90) from dual;
COS(90)
-----
-.44807362

SQL> select mod(20,3) from dual;
MOD(20,3)
-----
2

SQL> select power(5,2) from dual;
POWER(5,2)
-----
25

SQL> select round(3.4567,2) from dual;
ROUND(3.4567,2)
-----
3.46

SQL> select truncate(3.4567,2) from dual;
select truncate(3.4567,2) from dual
*
ERROR at line 1:
```

```
ORA-00904: "TRUNCATE": invalid identifier
```

```
SQL> select truncate(3.4567,2);
select truncate(3.4567,2)
*
ERROR at line 1:
ORA-00923: FROM keyword not found where expected
```

```
SQL> select sysdate from dual;
```

```
SYSDATE
```

```
-----
```

```
08-FEB-22
```

```
SQL> select systime from dual;
select systime from dual
*
ERROR at line 1:
ORA-00904: "SYSTIME": invalid identifier
```

```
SQL> select ltrim('    cse    ') from dual;
```

```
LTRIM(
```

```
-----
```

```
cse
```

```
SQL> select rtrim('    cse    ') from dual;
```

```
RTRIM(
```

```
-----
```

```
    cse
```

```
SQL> select upper(name) from cse;
```

```
UPPER(NAME)
```

```
-----
```

```
AKSHAT
```

```
SHUBHAM
```

```
AMIT
```

```
XYZ
```

Experiment No – 5

Code :

```
SQL*Plus: Release 19.0.0.0.0 - Production on Tue Feb 15 13:54:38 2022
Version 19.8.0.0.0
```

```
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```

```
Last Successful login time: Tue Feb 08 2022 14:03:48 +05:30
```

```
Connected to:
```

```
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.13.0.0.0
```

```
SQL> create table cse1(rno varchar(10),name varchar(25), marks
number(10),primary key(rno));
```

```
Table created.
```

```
SQL> desc cse1;
```

Name	Null?	Type
------	-------	------

RNO	NOT NULL	VARCHAR2(10)
NAME		VARCHAR2(25)
MARKS		NUMBER(10)

```
SQL> create table grade(rno varchar(10), grade varchar(5), foreign
key(rno) references cse1(rno));
```

```
Table created.
```

```
SQL> desc grade;
```

Name	Null?	Type
------	-------	------

RNO		VARCHAR2(10)
GRADE		VARCHAR2(5)

```
SQL> insert into cse1 values('&rno','&name',&marks);
Enter value for rno: 646
Enter value for name: Akshat
Enter value for marks: 80
old    1: insert into cse1 values('&rno','&name',&marks)
new    1: insert into cse1 values('646','Akshat',80)
```

1 row created.

```
SQL> insert into cse1 values('&rno','&name',&marks);
Enter value for rno: 649
Enter value for name: shubham
Enter value for marks: 85
old    1: insert into cse1 values('&rno','&name',&marks)
new    1: insert into cse1 values('649','shubham',85)
```

1 row created.

```
SQL> insert into cse1 values('&rno','&name',&marks);
Enter value for rno: 666
Enter value for name: xyz
Enter value for marks: 90
old    1: insert into cse1 values('&rno','&name',&marks)
new    1: insert into cse1 values('666','xyz',90)
```

1 row created.

```
SQL> select * from cse1;
```

RNO	NAME	MARKS
646	Akshat	80
649	shubham	85
666	xyz	90

```
SQL> insert into cse1 values('','akash',90);
insert into cse1 values('','akash',90)
*
ERROR at line 1:
ORA-01400: cannot insert NULL into ("RA1911003010646"."CSE1"."RNO")
```

```
SQL> create table random(reg varchar(20),name varchar(25) default
'tobeupdated',grade int check(grade>50));
```

Table created.

```
SQL> desc random;
```

Name	Null?	Type
REG		VARCHAR2(20)
NAME		VARCHAR2(25)
GRADE		NUMBER(38)

```
SQL> insert into random values('646','akshat',80);
1 row created.

SQL> insert into random values('649','','90');
1 row created.

SQL> insert into random values('666','xyz',50);
insert into random values('666','xyz',50)
*
ERROR at line 1:
ORA-02290: check constraint (RA1911003010646.SYS_C005988) violated
```

```
SQL> select * from random;
```

REG	NAME	GRADE
646	akshat	80
649		90

Experiment No – 6

Code :

```
SQL*Plus: Release 19.0.0.0.0 - Production on Tue Feb 22 14:03:55 2022
Version 19.8.0.0.0
```

```
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```

```
Last Successful login time: Tue Feb 15 2022 14:21:28 +05:30
```

```
Connected to:
```

```
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.13.0.0.0
```

```
SQL> select * from cse;
```

RNO	NAME	MARKS	DEPT
646	akshat	90	CSE
649	shubham	85	CSE
633	amit	95	CSE
677	xyz	100	CSE

```
SQL> create view cseview as select name,marks from cse;
```

```
View created.
```

```
SQL> select * from cseview
2 ;
```

NAME	MARKS
akshat	90
shubham	85
amit	95
xyz	100

```
SQL> insert into cseview values('rohit',92);
1 row created.
```

```
SQL> select * from cseview;
```

NAME	MARKS
akshat	90
shubham	85
amit	95
xyz	100
rohit	92

```
SQL> select * from cse;
```

RNO	NAME	MARKS	DEPT
646	akshat	90	CSE
649	shubham	85	CSE
633	amit	95	CSE
677	xyz	100	CSE
	rohit	92	

```
SQL> desc cse;
```

Name	Null?	Type
RNO		NUMBER(3)
NAME		VARCHAR2(25)
MARKS		NUMBER(3)
DEPT		VARCHAR2(20)

```
SQL> desc marks;
```

```
ERROR:
ORA-04043: object marks does not exist
```

```
SQL> desc cse1;
```

Name	Null?	Type
RNO	NOT NULL	VARCHAR2(10)
NAME		VARCHAR2(25)
MARKS		NUMBER(10)

```
SQL> select * from cse1;
```

```
no rows selected
```

```
SQL> insert into cse1 values('646','akshat',90);
```

```
1 row created.
```

```
SQL> insert into cse1 values('649','shubham',99);
```

```
1 row created.
```

```
SQL> insert into cse1 values('633','amit',100);
1 row created.
```

```
SQL> select * from cse1;
```

RNO	NAME	MARKS
646	akshat	90
649	shubham	99
633	amit	100

```
SQL> create view cseview1 as select rno,name from cse1;
```

```
View created.
```

```
SQL> select * from cseview1;
```

RNO	NAME
646	akshat
649	shubham
633	amit

```
SQL> insert into cseview1 values('666','xyz');
```

```
1 row created.
```

```
SQL> select * from cseview1;
```

RNO	NAME
646	akshat
649	shubham
633	amit
666	xyz

```
SQL> select * from cse1;
```

RNO	NAME	MARKS
646	akshat	90
649	shubham	99
633	amit	100
666	xyz	

```
SQL> create view cseview2 as select name,marks from cse1;
```

```
View created.
```

```
SQL> select * from cseview2;
```

NAME	MARKS
akshat	90
shubham	99
amit	100
xyz	

```
SQL> insert into cseview2 values('rohit',95);
insert into cseview2 values('rohit',95)
*
ERROR at line 1:
ORA-01400: cannot insert NULL into ("RA1911003010646"."CSE1"."RN0")
```

```
SQL> select * from cseview2;
```

NAME	MARKS
akshat	90
shubham	99
amit	100
xyz	

```
SQL> select * from cse1;
```

RNO	NAME	MARKS
646	akshat	90
649	shubham	99
633	amit	100
666	xyz	

```
SQL> create view cseview3 as select rno,marks from cse1 where marks>90
with check option;
```

View created.

```
SQL> select * from cseview3;
```

RNO	MARKS
649	99
633	100

```
SQL> insert into cseview3 values('623',85);
insert into cseview3 values('623',85)
*
ERROR at line 1:
ORA-01402: view WITH CHECK OPTION where-clause violation
```

```
SQL> insert into cseview3 values('623',95);
```

1 row created.

```
SQL> select * from cseview3;
```

RNO	MARKS
649	99
633	100
623	95

```
SQL> select * from cse1;
```

RNO	NAME	MARKS
646	akshat	90
649	shubham	99
633	amit	100
666	xyz	
623		95

Experiment No – 7

Code :

```
SQL*Plus: Release 19.0.0.0.0 - Production on Tue Mar 8 13:59:03 2022
Version 19.8.0.0.0
```

```
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```

```
Last Successful login time: Tue Feb 22 2022 14:03:58 +05:30
```

```
Connected to:
```

```
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.13.0.0.0
```

```
SQL> select * from cse;
```

RNO	NAME	DEPT
646	akshat	CSE
649	shubham	CSE
633	amit	CSE
677	xyz	CSE

```
SQL> select * from marks;
```

RNO	SUBJECT	MARKS
646	Dis OS	89
649	Biometrics	76
636	NRA	83
633	NRA	80

```
SQL> select cse.rno,cse.name,marks.subject,marks.marks from cse inner join
marks on cse.rno=marks.rno;
```

RNO	NAME	SUBJECT	MARKS
-----	------	---------	-------

646	akshat	Dis OS	89
649	shubham	Biometrics	76
633	amit	NRA	80

SQL> select cse.rno,cse.name,marks.subject,marks.marks from cse left join marks on cse.rno=marks.rno;

RNO	NAME	SUBJECT	MARKS
646	akshat	Dis OS	89
649	shubham	Biometrics	76
633	amit	NRA	80
677	xyz		

SQL> select cse.rno,cse.name,marks.subject,marks.marks from cse right join marks on cse.rno=marks.rno;

RNO	NAME	SUBJECT	MARKS
646	akshat	Dis OS	89
649	shubham	Biometrics	76
633	amit	NRA	80
		NRA	83

SQL>

SQL> select cse.rno,cse.name,marks.subject,marks.marks from cse full join marks on cse.rno=marks.rno;

RNO	NAME	SUBJECT	MARKS
646	akshat	Dis OS	89
649	shubham	Biometrics	76
		NRA	83
633	amit	NRA	80
677	xyz		

SQL> select rno from cse union select rno from marks;

RNO
633
636
646
649
677

SQL> select rno from cse union all select rno from marks;

RNO
646
649
633
677
646
649
636

633

8 rows selected.

SQL> select rno from cse intersect select rno from marks;

RNO

633

646

649

SQL> select rno from cse minus select rno from marks;

RNO

677

Study of Triggers in PL/SQL

Aim: To create a trigger for the table with attributes reg-no, mark1, mark2, mark3, total such that total is automatically calculated on insertion and updation of a record.

Syntax:

```

CREATE [OR REPLACE] TRIGGER trigger-name
  { BEFORE | AFTER | INSTEAD OF }
  { INSERT [OR] | UPDATE [OR] | Delete }
  [OF Col-name]
  ON table-name
  [FOR EACH ROW]
  WHEN (condition)
  DECLARE
    Declaration - Statements
    BEGIN
      Executable - Statements
      Exception
      Exception-handling - Statements
    END;
  
```

Code:

SQL> Create table CSE (reg-no int, mark1 int, mark2 int, mark3 int, total int);

SQL> Insert into CSE values (646, 92, 86, 90, 0);

Name	Type	Null?
reg-no	NUMBER	
mark1	NUMBER	
mark2	NUMBER	
mark3	NUMBER	
total	NUMBER	

Structure of the Table

Reg-no	Mark1	Mark2	Mark3	Total
646	92	86	90	0

Before creation of trigger

SQL> Create or replace trigger total-marks
before insert or update on CSE
for each row

begin

:new.total := :new.mark1 + :new.mark2 + new.mark3;

end;

/

SQL> insert into cse (reg-no, mark1, mark2, mark3)
values (649, 89, 90, 90);

SQL> update cse set mark2 = 90 where reg-no = 646;

~~Result is~~ Hence, the trigger was successfully
~~created and executed.~~

Reg-no	Mark1	Mark2	Mark3	Total
646	92	90	90	272
649	89	90	90	269

After creation of Trigger

Study of Cursors in PL/SQL

Aim: To create two tables of student's details

Table 1: reg-no, name, city

Table 2: reg-no, marks, grade

Using cursor print name, city & grade where marks is greater than 70.

Syntax:

cursorname - attribute tablename. attribute % type ;

CURSOR cursorname - tablename is

SELECT attributes ;

BEGIN

OPEN cursorname - tablename

LOOP

FETCH

cursorname into variables ;

EXIT WHEN cursorname % not found ;

dbms - output. put-line ("output line");

END LOOP ;

CLOSE cursorname ;

END ;

/

Code:

SQL > Create table student (reg-no int, name varchar(20),
city varchar(20)) ;

Name	Type	Null?
reg-no	Number(38)	Primary Key
name	Varchar(20)	
city	Varchar(20)	

Structure of Table 1 (Student)

Name	Type	Null?
reg-no	Number(38)	
marks	Number(38)	
grade	Varchar(5)	

Structure of Table 2 (Academic)

SQL> insert into student values (646, 'Akshat', 'Jaipur');
 SQL> insert into student values (649, 'Shubham', 'Shimla');
 SQL> insert into student values (633, 'Amit', 'Kolkata');
 SQL> insert into student values (666, 'xyz', 'Delhi');

SQL> Create table academic (reg-no int, marks int,
 grade varchar(5));

SQL> insert into academic values (646, 89, 'A+');
 SQL> insert into academic values (649, 78, 'A');
 SQL> insert into academic values (633, 93, 'O');
 SQL> insert into academic values (666, 38, 'F');

SQL> Alter table Student add primary key (Reg-no);

SQL> Alter table academic add foreign key (Reg-no)
 references student (Reg-no);

SQL> DECLARE

c-name student.name % type;
 c-city student.city % type;
 c-grade academic.grade % type;
 CURSOR c-student IS

SELECT student.name, student.city, academic.grade
 FROM student INNER JOIN academic ON student.reg-no
 = academic.reg-no WHERE academic.marks > 70;

BEGIN

OPEN c-student;

Reg-no	Name	City
646	Arshat	Jaipur
649	Shubham	Shimla
633	Amit	Kolkata
666	xyz	Delhi

Student Table

Reg-no	Marks	Grade
646	89	A+
649	78	A
633	93	O
668	38	F

Academic Table

LOOP

FETCH

C-student into c-name, c-city, c-grade;
EXIT WHEN C-student% notfound;
dbms-output.put-line (c-name || ' ' || c-city || ' ' || c-grade);
END LOOP;
CLOSE C-student;
END;

done

Result: Hence, the cursor was successfully executed.

Output:

Akshat Jaipur A
Shubham Shimla A
Amit Kolkata O

PL/SQL Procedures

Aim: Write a program in PL/SQL to take 2 numbers as an input and do arithmetic operations on them.

Syntax : **DECLARE**

<declaration section>

BEGIN

<executable command(s)>

EXCEPTION

<exception Handling>

END;

Code :

DECLARE

a number;

b number;

res number;

diff number;

prod number;

div number;

BEGIN

dbms-output.put-line ('Enter a:');

a := &a;

dbms-output.put-line ('Enter b:');

b := &b;

res := a + b;

Output:

Enter Value for a : 3

old10 : a := &a ;

new10 : a := 3 ;

Enter Value for b : 4

old12 : b := &b ;

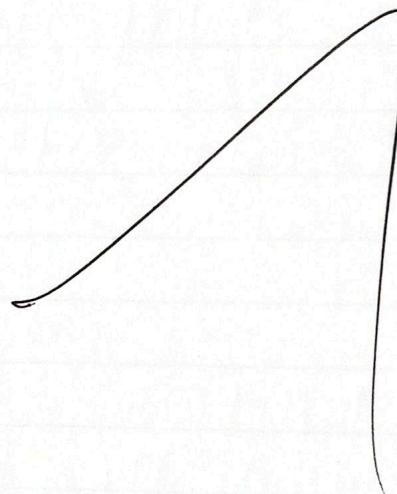
new12 : b := 4

Addition : 7

Difference : -1

Multiplication : 12

Division : .75



```
diff := a - b;  
prod := a * b;  
div := a / b;  
dbms_output.put_line ('Addition : ' || res);  
dbms_output.put_line ('Subtraction : ' || diff);  
dbms_output.put_line ('Multiplication : ' || prod);  
dbms_output.put_line ('Division : ' || div);  
END;
```

~~PL/SQL~~
~~Result~~

Result : Hence, the PL/SQL procedure to do arithmetic operations was successfully completed.