Advanced DBMS

(Assignment –II)

Submitted in partial fulfilment of the requirements for the degree of

Master of Technology in Information Technology

by

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(2009)

Advanced DBMS

CERTIFICATE

This is to certify that the Assignment-II entitled (Advanced DBMS, subject code: MT14) submitted by Vijayananda D Mohire having Roll Number 921DMTE0113 for the partial fulfilment of the requirements of Master of Technology in Information Technology degree of Karnataka State Open University, Mysore, embodies the bonafide work done by him under my supervision.

Place: _____ **Signature of the Internal Supervisor**

Name

Date: _____ **Designation**

For Evaluation

Question Number	**Maximum Marks**	**Marks awarded**	**Comments, if any**
1	5		
2	5		
TOTAL	10		

Evaluator's Name and Signature Date

Preface

This document has been prepared specially for the assignments of M.Tech – IT I Semester. This is mainly intended for evaluation of assignment of the academic M.Tech - IT, I semester. I have made a sincere attempt to gather and study the best answers to the assignment questions and have attempted the responses to the questions. I am confident that the evaluator's will find this submission informative and evaluate based on the provide content.

For clarity and ease of use there is a Table of contents and Evaluators section to make easier navigation and recording of the marks. A list of references has been provided in the last page – Bibliography that provides the source of information both internal and external. Evaluator's are welcome to provide the necessary comments against each response, suitable space has been provided at the end of each response.

I am grateful to the Infysys academy, Koramangala, Bangalore in making this a big success. Many thanks for the timely help and attention in making this possible within specified timeframe. Special thanks to Mr. Vivek and Mr. Prakash for their timely help and guidance.

Candidate's Name and Signature Date

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RESPONSE TO ASSIGNMENT - II

Question 1 Make a table using Oracle, SQL and made five entries and run five different commands.

Answer 1

```
CREATE TABLE  "STUDENTS"
  (         "STUDENTID" NUMBER NOT NULL ENABLE,
            "STUDENTNAME" VARCHAR2(4000) NOT NULL ENABLE,
            "STUDENTAGE" NUMBER,
            "STUDENTCLASS" VARCHAR2(4000),
            "STUDENTGPA" FLOAT,
            "STUDENTDOJ" DATE,
            "STUDENTMOBILE" NUMBER,
             CONSTRAINT "STUDENTS_PK" PRIMARY KEY ("STUDENTID", "STUDENTNAME")
ENABLE,
             CONSTRAINT "STUDENTS_UK1" UNIQUE ("STUDENTID") ENABLE
   )
/
```

Figure below shows Table structure(After running CREATE) as in Oracle 10g Express Edition

```
DESC STUDENTS;
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **STUDENTS**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comm
STUDENTS	STUDENTID	Number	-	-	-	1	-	-	-
	STUDENTNAME	Varchar2	4000	-	-	2	-	-	-
	STUDENTAGE	Number	-	-	-	-	✓	-	-
	STUDENTCLASS	Varchar2	4000	-	-	-	✓	-	-
	STUDENTGPA	Float	22	126	-	-	✓	-	-
	STUDENTDOJ	Date	7	-	-	-	✓	-	-
	STUDENTMOBILE	Number	-	-	-	-	✓	-	-

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Figure 1 Student Table created (Oracle, 2009)

```
INSERT
INTO STUDENTS (STUDENTID,
        STUDENTNAME,STUDENTAGE,STUDENTCLASS,STUDENTGPA,STUDENTDOJ,STU
        DENTMOBILE)
VALUES (001, 'Maya', 24, 'B.Tech', 3, '15-JAN-2009', 9342567);
INSERT
INTO STUDENTS (STUDENTID,
        STUDENTNAME,STUDENTAGE,STUDENTCLASS,STUDENTGPA,STUDENTDOJ,STU
        DENTMOBILE)
VALUES (002, 'Sara', 25, 'B.Tech', 4, '15-JAN-2009', 1344567);
INSERT INTO STUDENTS (STUDENTID,
        STUDENTNAME,STUDENTAGE,STUDENTCLASS,STUDENTGPA,STUDENTDOJ,STU
        DENTMOBILE)
VALUES (003, 'Vijay', 29, 'B.Tech', 4, '10-JAN-2009', 98345678);
INSERT INTO STUDENTS (STUDENTID,
        STUDENTNAME,STUDENTAGE,STUDENTCLASS,STUDENTGPA,STUDENTDOJ,STU
        DENTMOBILE)
```

VALUES (004, 'Ajay', 24, 'B.Tech', 3, '20-JAN-2009', 23456788);

INSERT INTO STUDENTS (STUDENTID,

STUDENTNAME,STUDENTAGE,STUDENTCLASS,STUDENTGPA,STUDENTDOJ,STU

DENTMOBILE)

VALUES (005, 'William', 24, 'B.Tech', 3.5, '10-JAN-2009', 1123456);

Figure below shows Table data (After running 5 INSERT statement) as in Oracle 10g Express Edition Object Browser

STUDENTID	STUDENTNAME	STUDENTAGE	STUDENTCLASS	STUDENTGPA	STUDENTDOJ	STUDENTMOBILE
1	Maya	24	B.Tech	3	15-JAN-09	9342567
4	Ajay	24	B.Tech	3	20-JAN-09	23456788
2	Sara	25	B.Tech	4	15-JAN-09	1344567
3	Vijay	29	B.Tech	4	10-JAN-09	98345678
5	William	24	B.Tech	3.5	10-JAN-09	1123456
						row(s) 1 - 5 of 5

Figure 2 Student Table populated (Oracle, 2009)

SELECT STUDENTID, STUDENTNAME, STUDENTGPA FROM STUDENTS WHERE

STUDENTGPA > 3;

STUDENTID	STUDENTNAME	STUDENTGPA
2	Sara	4
3	Vijay	4
5	William	3.5

Figure 3 Select Statement (Oracle, 2009)

Five different commands:

Command 1) – DML type

UPDATE Students S

SET S.StudentMobile = 234561234

WHERE S.StudentID = 1

STUDENTID	STUDENTNAME	STUDENTAGE	STUDENTCLASS	STUDENTGPA	STUDENTDOJ	STUDENTMOBIL
1	Maya	24	B.Tech	3	15-JAN-09	234561234
4	Ajay	24	B.Tech	3	20-JAN-09	23456788
2	Sara	25	B.Tech	4	15-JAN-09	1344567
3	Vijay	29	B.Tech	4	10-JAN-09	98345678
5	William	24	B.Tech	3.5	10-JAN-09	1123456

Figure 4 DML Command : Update (Oracle, 2009)

Command 2) – DML type

SELECT COUNT(*) FROM Students WHERE StudentDoj >= '15-JAN-09';

COUNT(*)
3

Figure 5 DML Command: Select (Oracle, 2009)

Command 3) DDL type

alter table

Students

add

ProjGuide varchar2(10);

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default
STUDENTS	STUDENTID	Number	-	-	-	1	-	-
	STUDENTNAME	Varchar2	4000	-	-	2	-	-
	STUDENTAGE	Number	-	-	-	-	✓	-
	STUDENTCLASS	Varchar2	4000	-	-	-	✓	-
	STUDENTGPA	Float	22	126	-	-	✓	-
	STUDENTDOJ	Date	7	-	-	-	✓	-
	STUDENTMOBILE	Number	-	-	-	-	✓	-
	PROJGUIDE	Varchar2	10	-	-	-	✓	-

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Figure 6 DDL Command: Alter (Oracle, 2009)

Command 4) DCL type

grant select on Students to public;

Command 5) TCL type

```
DECLARE
v_mob Students.StudentMobile%TYPE;
BEGIN
SAVEPOINT A;
UPDATE STUDENTS SET STUDENTMOBILE= 12377760 WHERE STUDENTID= 2;
SELECT STUDENTMOBILE INTO v_mob FROM Students WHERE Studentid = 2;
DBMS_OUTPUT.PUT_LINE('Mobile updated to ' || v_mob);
SAVEPOINT B;
ROLLBACK TO A;
SELECT STUDENTMOBILE INTO v_mob FROM Students WHERE Studentid = 2;
DBMS_OUTPUT.PUT_LINE('Mobile rolled back to ' || v_mob);
COMMIT;
END
SELECT * FROM Students;
```

Output:

Mobile updated to 12377760

Mobile rolled back to 1344567

Statement processed.

STUDENTID	STUDENTNAME	STUDENTAGE	STUDENTCLASS	STUDENTGPA	STUDENTDOJ	STUDENTMOBILE	P
1	Maya	24	B.Tech	3	15-JAN-09	234561234	-
4	Ajay	24	B.Tech	3	20-JAN-09	23456788	-
2	Sara	25	B.Tech	4	15-JAN-09	1344567	-
3	Vijay	29	B.Tech	4	10-JAN-09	98345678	-
5	William	24	B.Tech	3.5	10-JAN-09	1123456	-

Figure 7 TCL Command : SAVE and ROLLBACK (Oracle, 2009)

Evaluator's Comments if any:

Question 2 Apply the join operation on the two different tables?

Answer 2

```
CREATE TABLE  "SAILORS"
  (         "SAILORID" NUMBER NOT NULL ENABLE,
            "SAILORNAME" CHAR(100),
            "RATING" NUMBER,
            "AGE" NUMBER
  )
/
CREATE TABLE  "BOATS"
  (         "BOATID" NUMBER,
            "BOATNAME" VARCHAR2(4000),
            "BOATCOLOR" VARCHAR2(4000)
  )
/
CREATE TABLE  "RESERVERS"
```

```
  (         "SAILORID" NUMBER NOT NULL ENABLE,
            "BOATID" NUMBER NOT NULL ENABLE,
            "BOOKINGDATE" DATE
  )
/
INSERT
INTO Sailors (SAILORID, SAILORNAME, RATING, AGE)
VALUES (1, 'Smith', 1, 32);
INSERT
INTO Sailors (SAILORID, SAILORNAME, RATING, AGE)
VALUES (2, 'John', 2, 30);
INSERT
INTO Sailors (SAILORID, SAILORNAME, RATING, AGE)
VALUES (3, 'Joe', 1, 25);
INSERT
INTO Sailors (SAILORID, SAILORNAME, RATING, AGE)
VALUES (4, 'Vivek', 2, 30);
INSERT
INTO Sailors (SAILORID, SAILORNAME, RATING, AGE)
VALUES (5, 'Paul', 4,32);
select * from sailors order by sailorid;
```

SAILORID	SAILORNAME	RATING	AGE
1	Smith	1	32
2	John	2	30
4	Vivek	2	30
5	Paul	4	32

Figure 8 Sailor Table created and populated (Oracle, 2009)

```
INSERT
INTO Boats (BOATID, BOATNAME, BOATCOLOR)
VALUES (1, 'Coaster', 'White');
INSERT
INTO Boats (BOATID, BOATNAME, BOATCOLOR)
VALUES (2, 'Lunar', 'Grey');
INSERT
INTO Boats (BOATID, BOATNAME, BOATCOLOR)
VALUES (3, 'Pitty', 'Green');
INSERT
INTO Boats (BOATID, BOATNAME, BOATCOLOR)
VALUES (4, 'Salmon', 'Blue');
INSERT
INTO Boats (BOATID, BOATNAME, BOATCOLOR)
VALUES (5, 'Hound', 'Black');
select * from Boats order by boatid;
```

BOATID	BOATNAME	BOATCOLOR
1	Coaster	White
2	Lunar	Grey
3	Pitty	Green
4	Salmon	Blue
5	Hound	Black

Figure 9 Boat Table created and populated (Oracle, 2009)

```
INSERT
INTO reservers (SAILORID, BOATID, BOOKINGDATE)
VALUES (1, 1, '16-JAN-2009');
INSERT
```

```
INTO reservers (SAILORID, BOATID, BOOKINGDATE)
VALUES (2, 1, '16-JAN-2009');
INSERT
INTO reservers (SAILORID, BOATID, BOOKINGDATE)
VALUES (3, 2, '17-JAN-2009');
INSERT
INTO reservers (SAILORID, BOATID, BOOKINGDATE)
VALUES (4, 2, '17-JAN-2009');
INSERT
INTO reservers (SAILORID, BOATID, BOOKINGDATE)
VALUES (5, 3, '16-JAN-2009');
INSERT
INTO reservers (SAILORID, BOATID, BOOKINGDATE)
VALUES (5, 4, '17-JAN-2009');
INSERT
INTO reservers (SAILORID, BOATID, BOOKINGDATE)
VALUES (5, 3, '18-JAN-2009');
INSERT
INTO reservers (SAILORID, BOATID, BOOKINGDATE)
VALUES (1, 3, '18-JAN-2009');
select * from reservers order by sailorid;
```

SAILORID	BOATID	BOOKINGDATE
1	1	16-JAN-09
1	3	18-JAN-09
2	1	16-JAN-09
3	2	17-JAN-09
4	2	17-JAN-09
4	2	17-JAN-09
5	4	17-JAN-09
5	3	16-JAN-09
5	3	18-JAN-09
5	3	16-JAN-09

Figure 10 Reservers table created and populated (Oracle, 2009)

SELECT sailorid, boatid

FROM Sailors NATURAL LEFT OUTER JOIN Reservers order by sailorid;

SAILORID	BOATID
1	1
1	3
2	1
4	2
4	2
5	3
5	3
5	3
5	4

Figure 11 Left Join condition for Sailor and Reservers (Oracle, 2009)

NOTE: Sailor 3 is missing in above as it is a Left Outer Join and Sailors table is on the Left side of the Join and it does not have sailor 3.

Evaluator's Comments if any:

Bibliography

Oracle. (2009). Oracle Database 10g Express edition. California, USA.