Practical 1: Study of Data Definition Language Statement

A) Write the query for the following

1) Create the following tables and include the necessary constraints NOT NULL, DEFAULT, CHECK, PRIMARY KEY, UNIQUE.

a) Student (sid, sname, gender, dob, remark,marks, class, email)

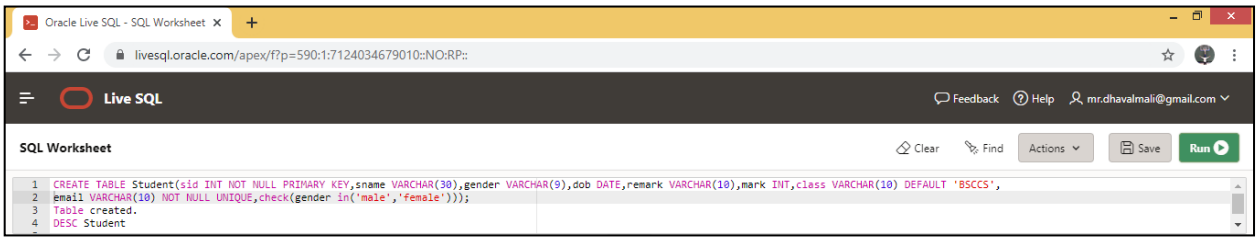

TABLE STUDENT

Column	Null?	Type
SID	NOT NULL	NUMBER
SNAME	-	VARCHAR2(30)
GENDER	-	VARCHAR2(9)
DOB	-	DATE
REMARK	-	VARCHAR2(10)
MARK	-	NUMBER
CLASS	-	VARCHAR2(10)
EMAIL	NOT NULL	VARCHAR2(10)

Download CSV

8 rows selected.

b) Course (cid, cname, credits)

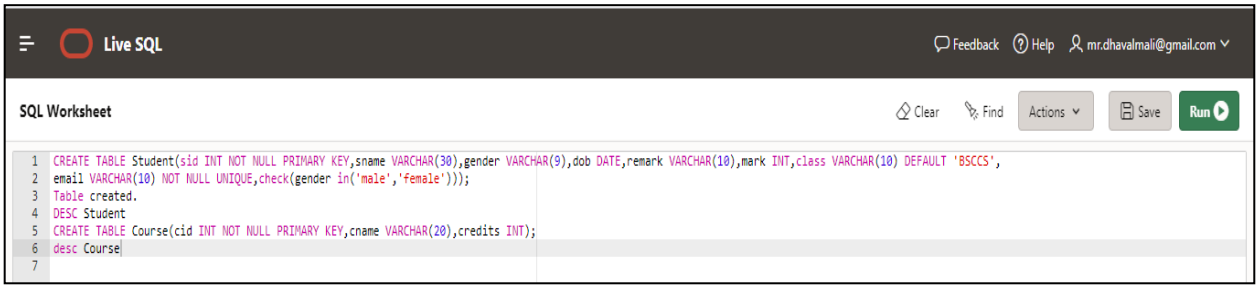

TABLE COURSE

Column	Null?	Type
CID	NOT NULL	NUMBER
CNAME	-	VARCHAR2(20)
CREDITS	-	NUMBER

Download CSV

3 rows selected.

2) Alter the structure of the Course table

a) Modify datatype of cname.

```
desc Course
ALTER TABLE Course MODIFY(cname varchar(33));
desc Course
```

Table altered.

TABLE COURSE

Column	Null?	Type
CID	NOT NULL	NUMBER
CNAME	-	VARCHAR2(33)
CREDITS	-	NUMBER

Download CSV

3 rows selected.

b) Add a column coursehours with minimum course hours greater than 45.

```
ALTER TABLE Course MODIFY(cname varchar(33));
desc Course
alter table Course add coursehours int check(coursehours>=45);
desc Course
```

TABLE COURSE

Column	Null?	Type
CID	NOT NULL	NUMBER
CNAME	-	VARCHAR2(33)
CREDITS	-	NUMBER
COURSEHOURS	-	NUMBER

Download CSV

4 rows selected.

c) Add a column cdesc

```
8  desc Course
9  alter table Course add coursehours int check(coursehours>=45);
10 desc Course
11 alter table Course add cdesc varchar(33);
12 desc Course
```

TABLE COURSE

Column	Null?	Type
CID	NOT NULL	NUMBER
CNAME	-	VARCHAR2(33)
CREDITS	-	NUMBER
COURSEHOURS	-	NUMBER
CDESC	-	VARCHAR2(33)

Download CSV
5 rows selected.

3) Alter the structure of Student Table

a. Add column age with minimum age as 17.

```
13 alter table Student add age int check(age>=17);
14 desc Student
```

TABLE STUDENT

Column	Null?	Type
SID	NOT NULL	NUMBER
SNAME	-	VARCHAR2(30)
GENDER	-	VARCHAR2(9)
DOB	-	DATE
REMARK	-	VARCHAR2(10)
MARK	-	NUMBER
CLASS	-	VARCHAR2(10)
EMAIL	NOT NULL	VARCHAR2(10)
AGE	-	NUMBER

Download CSV
9 rows selected.

b) Delete the column dob

```
15 alter table Student drop column dob;
16 desc Student
```

TABLE STUDENT

Column	Null?	Type
SID	NOT NULL	NUMBER
SNAME	-	VARCHAR2(30)
GENDER	-	VARCHAR2(9)
REMARK	-	VARCHAR2(10)
MARK	-	NUMBER
CLASS	-	VARCHAR2(10)
EMAIL	NOT NULL	VARCHAR2(10)
AGE	-	NUMBER

Download CSV
8 rows selected.

c) Add a column phoneno.

```
17 alter table Student add phoneno varchar(10);
18 desc Student
```

TABLE STUDENT

Column	Null?	Type
SID	NOT NULL	NUMBER
SNAME	-	VARCHAR2(30)
GENDER	-	VARCHAR2(9)
REMARK	-	VARCHAR2(10)
MARK	-	NUMBER
CLASS	-	VARCHAR2(10)
EMAIL	NOT NULL	VARCHAR2(10)
AGE	-	NUMBER
PHONENO	-	VARCHAR2(10)

Download CSV
9 rows selected.

d) Rename phoneno to contactno

```
21 alter table Student rename column phoneno to contactno;
22 desc Student
```

TABLE STUDENT

Column	Null?	Type
SID	NOT NULL	NUMBER
SNAME	-	VARCHAR2(30)
GENDER	-	VARCHAR2(9)
REMARK	-	VARCHAR2(10)
MARK	-	NUMBER
CLASS	-	VARCHAR2(10)
EMAIL	NOT NULL	VARCHAR2(10)
AGE	-	NUMBER
CONTACTNO	-	VARCHAR2(10)

Download CSV

9 rows selected.

4) Rename Student table as Student_details.

```
25 alter table Student rename to Student_details;
26 desc Student_details
```

TABLE STUDENT_DETAILS

Column	Null?	Type
SID	NOT NULL	NUMBER
SNAME	-	VARCHAR2(30)
GENDER	-	VARCHAR2(9)
REMARK	-	VARCHAR2(10)
MARK	-	NUMBER
CLASS	-	VARCHAR2(10)
EMAIL	NOT NULL	VARCHAR2(10)
AGE	-	NUMBER
CONTACTNO	-	VARCHAR2(10)

Download CSV

9 rows selected.

5) Describe the structure of both the tables.

```
27  desc Student_details
```

TABLE STUDENT_DETAILS

Column	Null?	Type
SID	NOT NULL	NUMBER
SNAME	-	VARCHAR2(30)
GENDER	-	VARCHAR2(9)
REMARK	-	VARCHAR2(10)
MARK	-	NUMBER
CLASS	-	VARCHAR2(10)
EMAIL	NOT NULL	VARCHAR2(10)
AGE	-	NUMBER
CONTACTNO	-	VARCHAR2(10)

Download CSV
9 rows selected.

```
28  desc Course
```

Download CSV
9 rows selected.

TABLE COURSE

Column	Null?	Type
CID	NOT NULL	NUMBER
CNAME	-	VARCHAR2(33)
CREDITS	-	NUMBER
COURSEHOURS	-	NUMBER
CDESC	-	VARCHAR2(33)

Download CSV
5 rows selected.

6) Drop the table student_details and Course.

```
29  drop table Student_details;
30  drop table Course;
```

Table dropped.

Table dropped.

B) 1. Create a table EMPLOYEE with following attributes and specific data types and constraints required (Emp_no, E_name, E_address, E_ph_no, Dept_no, Dept_name,Job_id , Salary)

2. Add a new column HIREDATE to the existing relation.

```
3  alter table EMPLOYEE add HIREDATE date;
4  desc EMPLOYEE
```

TABLE EMPLOYEE

Column	Null?	Type
EMP_NO	NOT NULL	NUMBER
E_NAME	-	VARCHAR2(10)
E_ADDRESS	-	VARCHAR2(25)
E_PH_NO	-	NUMBER
DEPT_NO	NOT NULL	NUMBER
DEPT_NAME	-	VARCHAR2(20)
JOB_ID	-	NUMBER
SALARY	-	VARCHAR2(25)
HIREDATE	-	DATE

Download CSV
9 rows selected.

3. Change the datatype of JOB_ID from char to varchar2.

```
5  alter table EMPLOYEE modify(Job_id varchar(20));
6  desc EMPLOYEE
```

Table altered.

TABLE EMPLOYEE

Column	Null?	Type
EMP_NO	NOT NULL	NUMBER
E_NAME	-	VARCHAR2(10)
E_ADDRESS	-	VARCHAR2(25)
E_PH_NO	-	NUMBER
DEPT_NO	NOT NULL	NUMBER
DEPT_NAME	-	VARCHAR2(20)
JOB_ID	-	VARCHAR2(20)
SALARY	-	VARCHAR2(25)
HIREDATE	-	DATE

Download CSV
9 rows selected.

4. Change the name of column/field Emp_no to E_no.

```
7  alter table EMPLOYEE rename column Emp_no to E_no;
8  desc EMPLOYEE
```

Table altered.

TABLE EMPLOYEE

Column	Null?	Type
E_NO	NOT NULL	NUMBER
E_NAME	-	VARCHAR2(10)
E_ADDRESS	-	VARCHAR2(25)
E_PH_NO	-	NUMBER
DEPT_NO	NOT NULL	NUMBER
DEPT_NAME	-	VARCHAR2(20)
JOB_ID	-	VARCHAR2(20)
SALARY	-	VARCHAR2(25)
HIREDATE	-	DATE

Download CSV
9 rows selected.

5. Modify the column width of the job field of emp table.

```
9  alter table EMPLOYEE modify Job_id varchar(10);
10 desc EMPLOYEE
```

```
Table altered.
```

TABLE EMPLOYEE

Column	Null?	Type
E_NO	NOT NULL	NUMBER
E_NAME	-	VARCHAR2(10)
E_ADDRESS	-	VARCHAR2(25)
E_PH_NO	-	NUMBER
DEPT_NO	NOT NULL	NUMBER
DEPT_NAME	-	VARCHAR2(20)
JOB_ID	-	VARCHAR2(10)
SALARY	-	VARCHAR2(25)
HIREDATE	-	DATE

Download CSV

9 rows selected.

C) Create the following tables with specified attributes and constraints

Department Table: Department_Id varchar2(20) primarykey, Department_Name varchar2(25) with required data.

```
1  create table Department(Department_ID varchar(20) primary key,Department_Name varchar(25));
2  desc Department
```

```
Table created.
```

TABLE DEPARTMENT

Column	Null?	Type
DEPARTMENT_ID	NOT NULL	VARCHAR2(20)
DEPARTMENT_NAME	-	VARCHAR2(25)

Download CSV

2 rows selected.

Instructor Table: Instructor_id varchar2(20) primary key, Department_Id varchar2(20) Foreign key, Last_Name varchar2(25), First_Name varchar2(200) must have value, Telephone varchar2(20) must be unique, gender char(1) must be either ‘F’or ‘M’,city varchar(10) default value must be ‘MUMBAI’.

```
1  create table Instructer(Instructer_ID varchar(20) primary key,Department_ID varchar(20),Foreign key(Department_ID)references Department(Department_id),
2  Last_Name varchar(25),First_Name varchar(200) not null,Telephone varchar(20) unique,gender char(1) check(gender in ('F','M')),city varchar(10) default 'Mummbai');
3  desc Instructer
```

Table created.

TABLE INSTRUCTER

Column	Null?	Type
INSTRUCTER_ID	NOT NULL	VARCHAR2(20)
DEPARTMENT_ID	-	VARCHAR2(20)
LAST_NAME	-	VARCHAR2(25)
FIRST_NAME	NOT NULL	VARCHAR2(200)
TELEPHONE	-	VARCHAR2(20)
GENDER	-	CHAR(1)
CITY	-	VARCHAR2(10)

Download CSV
7 rows selected.

C) Create the following described below:

Table Name: EMP

Column	Data Type	Length	Precision	Scale	Primary Key	Nullable
EMPNO	Int	-	-	-	Yes	-
ENAME	Varchar2	10	-	-	-	No
JOB	Varchar2	9	-	-	-	✓
MGR	Int	-	-	-	-	✓
HIREDATE	Date	-	-	-	-	✓
SAL	Number	-	7	2	-	✓
COMM	Int	-	-	-	-	✓
DEPTNO	Int	-	-	-	-	✓

```
2  desc DEPT_DHAVAL;
3  create table emp_DHAVAL(EMPNO int primary key,ENAME varchar(10) not null,JOB varchar(9),MGR int,HIREDATE date,SAL number(7,2),
4  COMM int,DEPTNO int,foreign key(DEPTNO) references DEPT_DHAVAL(DEPTNO));
5  desc emp_DHAVAL
6
```

Table created.

TABLE EMP_DHAVAL

Column	Null?	Type
EMPNO	NOT NULL	NUMBER
ENAME	NOT NULL	VARCHAR2(10)
JOB	-	VARCHAR2(9)
MGR	-	NUMBER
HIREDATE	-	DATE
SAL	-	NUMBER(7,2)
COMM	-	NUMBER
DEPTNO	-	NUMBER

Download CSV
8 rows selected.

CLASS :FYBSC CS NAME : DHAVAL MALI ROLL NO.: 77

Table Name: DEPT

Column	Data Type	Length	Precision	Scale	Primary Key	Nullable
DEPTNO	Int	-	-	-	Yes	-
DNAME	Varchar2	14	-	-	-	No
LOC	Varchar2	13	-	-	-	✓

```
1  create table DEPT_DHAVAL(DEPTNO INT PRIMARY KEY,DNAME VARCHAR(14) NOT NULL,LOC VARCHAR(13));
2  desc DEPT_DHAVAL;
3
```

Table created.

TABLE DEPT_DHAVAL

Column	Null?	Type
DEPTNO	NOT NULL	NUMBER
DNAME	NOT NULL	VARCHAR2(14)
LOC	-	VARCHAR2(13)

Download CSV

3 rows selected.