2.1	04/08/25	Generating design of other traditional database model.	L3	4/8/25
2.2	11/08/25	DDL & DML commands with constraints	L3	11/8/25

4/8/25

Task-2: Generating design of other traditional Database Model

Aim:

To perform PDL data definition language and DML data manipulation language commands.

PDL commands:

→ Create
→ Drop
→ Alter
→ Truncate
→ Rename

DML commands:

→ Insert
→ Update
→ Delete
→ Select

PDL Commands:-

Create:

*Creating a table by using create commands.

```
Create table student (
        stu-id int;
        stu-name varchar(30);
        stu-department varchar(10);
        stu-gender varchar(5);
        stu-ph-no int);
```

* Using alter command we can add or remove the columns.

Syntax:

```
Alter table student ADD column stu-dept-id int;
```

Drop:

Drop command is used to drop the table completely.

```
Drop table student.
```

Truncate:

Truncate command is used to remove all data but keep structure.

After Alter table

desc student;

STU_ID	INT
STU_NAME	VARCHAR(30)
STU_DEPARTMENT	VARCHAR(30)
STU_GENDER	VARCHAR(15)
STU_PH_No	INT
STU_DEPART_ID	INT

After inserting into table

Select * from student;

S.No.	stu_ID	Stu-Name	stu-depart	stu-gender	stu-ph-no	stu-depart-id
1	30624	Arjun	CSE	Male	8688056	1225
2	28820	Dhruv	ECE	Male	123456	1445

Truncate table student.

DML Commands:-

Insert:

Insert command is used to insert to the values of the table.

```
Insert into student values
    (30624, 'Arjun', 'CSE', 'Male', '8688056')
    (28820, 'Aditya', 'ECE', 'Male', '123456')
```

Update:

Update command is used to update the existing records.

```
Update student
SET Stu_name = 'Mohith'
where stu_ID = 28820;
```

DELETE:

DELETE command is used to delete a record.

```
DELETE from student
where stu_ID = 28820;
```

SELECT:

```
SELECT * from student
```

S.No.	Stu_ID	Stu_Name	Stu-dept	Stu-gender	Stu-ph-no
1	28923	Arjun	CSE	Male	8688056

Ex:-

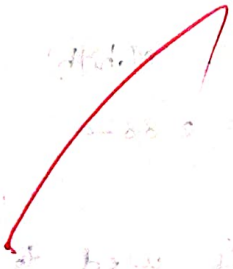
```
Create table student (
                Roll_no INT;
                Name Varchar(30);
                Age INT;
                Course Varchar(20);
Alter table students ADD
    Email Varchar(30);

INSERT into students values
(1, 'Aravind', 19, 'B.tech', aravind@gmail.com);
(2, 'Roy', 20, 'B tech', ray@gmail.com);
(3, 'Joy', 21, 'Btech', joy@gmail.com);
```

After updating the table

Select * from Student

S.No.	Stu-Id	Stu-Name	stu-department	Stu-gender	stu-phone-no	stu-depart-ID
1	30624	Arjun	CSE	Male	8888056	1225
2	28800	Dev	ECE	Male	123456	1445



Update students

SET Email = vtu30628@gmail.com

where Roll_no = 1;

DELETE *from students;

where Roll_no = 2;

SELECT * from students;

S.No.	Roll no	Name	Age	Course	Email
1	1	Arjun	19	B tech	vtu30628@gmail.com
2	3	Joy	21	B tech	joy@gmail.com

SELECT name *from students;

S.No.	Name
1	Arjun
2	Joy

SELECT *from students;

where Name = 'Arjun';

S.No.	Roll No	Name	Age	Course	Email
1	1	Arjun	19	Btech	vtu30628@gmail.com

VELTECH	
EX No.	2.1
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	3
RECORD (5)	–
TOTAL (20)	13
SIGN WITH DATE	

4/8/25

Result:-

Thus, all the DDL and DML commands in SQL are executed successfully.

11/8/25 Task-2.2 : DDL and DML commands with Constraints

Aim:-

To perform DDL and DML commands with constraints in SQL.

Constraints:-

→ NOT NULL
→ UNIQUE
→ PRIMARY KEY
→ FOREIGN KEY
→ CHECK
→ DEFAULT

NOT NULL:

It ensures a column cannot store NULL values.

Syntax:

CREATE TABLE TABLE_NAME(
COLUMNNAME DATATYPE NOTNULL);

UNIQUE:

It ensures all values in a column are unique.

Syntax:

CREATE TABLE tablename(
columnname datatype UNIQUE);

PRIMARY KEY:

It is the combination of NOTNULL & UNIQUE.

Syntax:

PRIMARY KEY (columnname)

FOREIGN KEY:

It ensures values in one table match values in another table.

Syntax:

FOREIGN KEY (column name) REFERENCE
another tablename (column name)

SELECT *from STUDENT — Before performing ALTER comma

S. No.	STU-ID	STU-NAME	STU-DEPARTMENT	STU-PH-No
1.	1	Arjun	102	9876543210
2.	2	Deepthi	101	9876501234

SELECT *from DEPARTMENT — Before performing ALTER command.

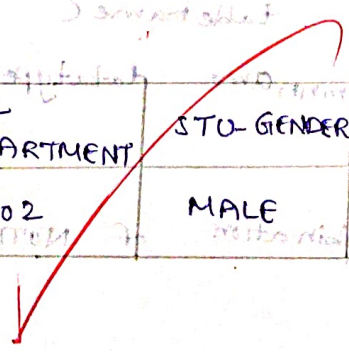
S. No.	STU-ID	STU-DEPARTMENT
1.	101	CSE
2.	102	ECE
3.	103	IT

SELECT *FROM STUDENT -- after performing UPDATE command.

S. No.	STU-ID	STU-NAME	STU-DEPARTMENT	STU-GENDER	STU-PH-No	STU-EMAIL
1.	1	Arjun	102	MALE	9848543210	NULL
2.	2	Deepthi	103	FEMALE	9876501234	NULL

SELECT *FROM STUDENT -- after performing delete comm and

S. No.	STU-ID	STU-NAME	STU-DEPARTMENT	STU-GENDER	STU-PH-NO	STU-EMAIL
1	1	Arjun	102	MALE	9876543210	NULL



DEFAULT:

It provides a default value for a column when none is specified.

Example:-

```
CREATE TABLE DEPARTMENT
        DEPT_ID INT PRIMARYKEY,
        DEPT_NAME VARCHAR(20) UNIQUE NOTNULL;
CREATE TABLE STUDENT (
        STU-ID INT PRIMARY KEY,
        STU-NAME VARCHAR(30) NOTNULL,
        STU-DEPARTMENT INT DEFAULT 101;
        STU-GENDER VARCHAR (6)
                CHECK (STU-GENDER('MALE','FEMALE');
        STU_PH_NO BIGINT UNIQUE;
        FOREIGN KEY (STU-DEPARTMENT) REFERENCES
                DEPARTMENT (DEPT-ID);
INSERT INTO DEPARTMENT VALUES
                (101, 'CSE');
                (102, 'ECE');
                (103, 'IT');
INSERT INTO STUDENT VALUES
        (1, 'Arjun', 102, 'MALE', 9876543210);
        (2, 'Deepthi', 'FEMALE', 9876501234);

SELECT * FROM DEPARTMENT;
SELECT * FROM STUDENT;

ALTER TABLE STUDENT
ADD STU-EMAIL VARCHAR(50) DEFAULT
'veltech@gmail.com';
```

S. No.	STU_ID	STU_NAME	STU-DEPARTMENT	STU-GENDER	STU-PH-NO	STU-EMAIL
1.	1	Arjun	102	MALE	9876543210	NULL
2.	2	Deepthi	101	FEMALE	9876501234	NULL

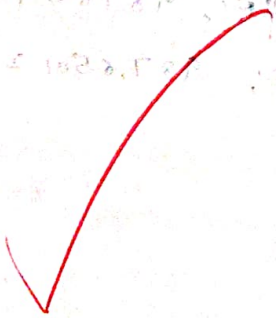
```
UPDATE_STUDENT
SET STU-DEPARTMENT =103
WHERE STU-NAME ='ANITA'
```

SELECT *From STUDENTS - After inserting values

Sl. No.	STU-ID	STU-NAME	STU-DEPARTMENT	STU-GENDER	STU-PH-NO	STU-EMAIL
1	1	Arjun	102	MALE	9876543210	NULL
2	2	Deepthi	101	FEMALE	9876501234	veltech@gmail.com
3	7	Neha	101	FEMALE.	9876501230	veltech@gmail.com

SELECT * FROM DEPARTMENT ; -- After inserting values

S. No.	DEPT-ID	DEPT-NAME
1.	101	CSE
2.	102	ECE
3.	103	IT



```
DELETE  FROM  DEPARTMENT
WHERE  DEPT_ID = 103;

INSERT  INTO  STUDENT  VALUES;
        (2, 'Deepthi', 'FEMALE', 9876501234);
        (7, 'Neha', 'FEMALE', 9876501230);

DROP  TABLE  DEPARTMENT;
-- Error --
Could not drop object 'DEPARTMENT' because it is
referenced by a FOREIGN KEY constraint.
```

To solve this first student table should be dropped then department table should be dropped.

VELTECH	
EX No.	2.2
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	3
RECORD (5)	-
TOTAL (20)	13
SIGN WITH DATE	18/8/25

Result:-

Thus, all the DDL and DML commands are with constraints are performed and executed successfully.