JAVA AWT BASED- Online MOOC's year wise student database management system - SQL CONNECTIVITY USING JDBC

A

Report

Submitted in partial fulfilment of the

Requirements for the award of the Degree of

BACHELOR OF ENGINEERING

IN

INFORMATION TECHNOLOGY

By

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BONAFIDE CERTIFICATE

This to Certify that the project report titled "Online MOOC's year wise student database management system" project work of Mr.S.HEMANTH KUMAR bearing Roll.no:1602-18-737-072 who carried out this project under my supervision in the IV semester for the academic year 2019-2020.

Signature

external examine

Signature

internal examine

ABSTRACT

Online MOOC's year wise Student Management System is a database management system which is helpful for students as well as the Mooc's providers. In the current system all the activities are done manually. It is very time consuming and costly. Our online Mooc's Student Management System deals with the various activities related to the students and mooc's provider. In the database can register as a user and user has of two types, student and administrator. Administrator has the power to add new user and can edit and delete a user. A student can register as user and can add edit and delete his profile. The administrator can add edit and delete marks for the student. All the users can see the marks.

INTRODUCTION

➢ REQUIREMENTS FOR ONLINE MOOC'S YEAR WISE DATABASE MANAGEMENT SYSTEM:

List of tables :

- Online MOOC's provider
- Courses
- Student
- Enrolls
- Assignments
- Results

List of attributes with their domain types:

ENTITY	ATTRIBUTES	DOMAIN
Online Mooc's provider	1. P_id 2. P_name 3. Type 4. Headquartes 5. Found	Number(5) Varchar2(20) Varchar2(20) Varchar2(20) Number(5)
Courses	1. C_id 2. C_name 3. Duration 4. Min_grade 5. Price 6. Status	Number(5) Varchar2(20) Varchar2(20) Char(5) Number(5) Varchar(10)
Student	1. S_id 2. First_name 3. Last_name 4. User_name 5. Password	Number(5) Varchar(10) Varchar(10) Varchar(10) Varchar(10)
Enrolls	1. S_id 2. C_id 3. Year	Number(5) Number(5) Number(5)
Assignments	1. A_id 2. C_id 3. Deadline 4. Score	Number(5) Number(5) Varchar(10) Number(5)

Results	1. S_id 2. C_id 3. A_id 4. Score 5. Grade	Number(5) Number(5) Number(5) Number(5) Char(5)

- Online mooc's provider offers as many courses to the students who want to persue the course so, it is a one to many mapping. As it is not necessary that one provider should offer only one course.
- Student enrols into courses, it is many to many mapping as any number of students can enrol into any number of courses.
- Student submits assignment, it is one to one as one student should submit one assignment as per the provider instructions.
- Student gets results if he/submit the assignments and attend the exam, it is one to one mapping as one student get only one result.

➢ SPECIFIC GOAL OF THE PROJECT:

The main goal to be achieved through this project was to provide a facility to the Online MOOC's providers to display the details of various courses, students who enroll into those courses, assignments they do, and the results they get based on their assignment submissions online.

The project also ensure that the details of the students are confidential and are stored in the database.

SQL particular Online MOOC's provider, courses, student, assignments and results can be executed.

➢ Architecture and technology used:

SQL Plus is the most basic Oracle Database utility with a basic command-line interface, commonly used by users, administrators and programmers.

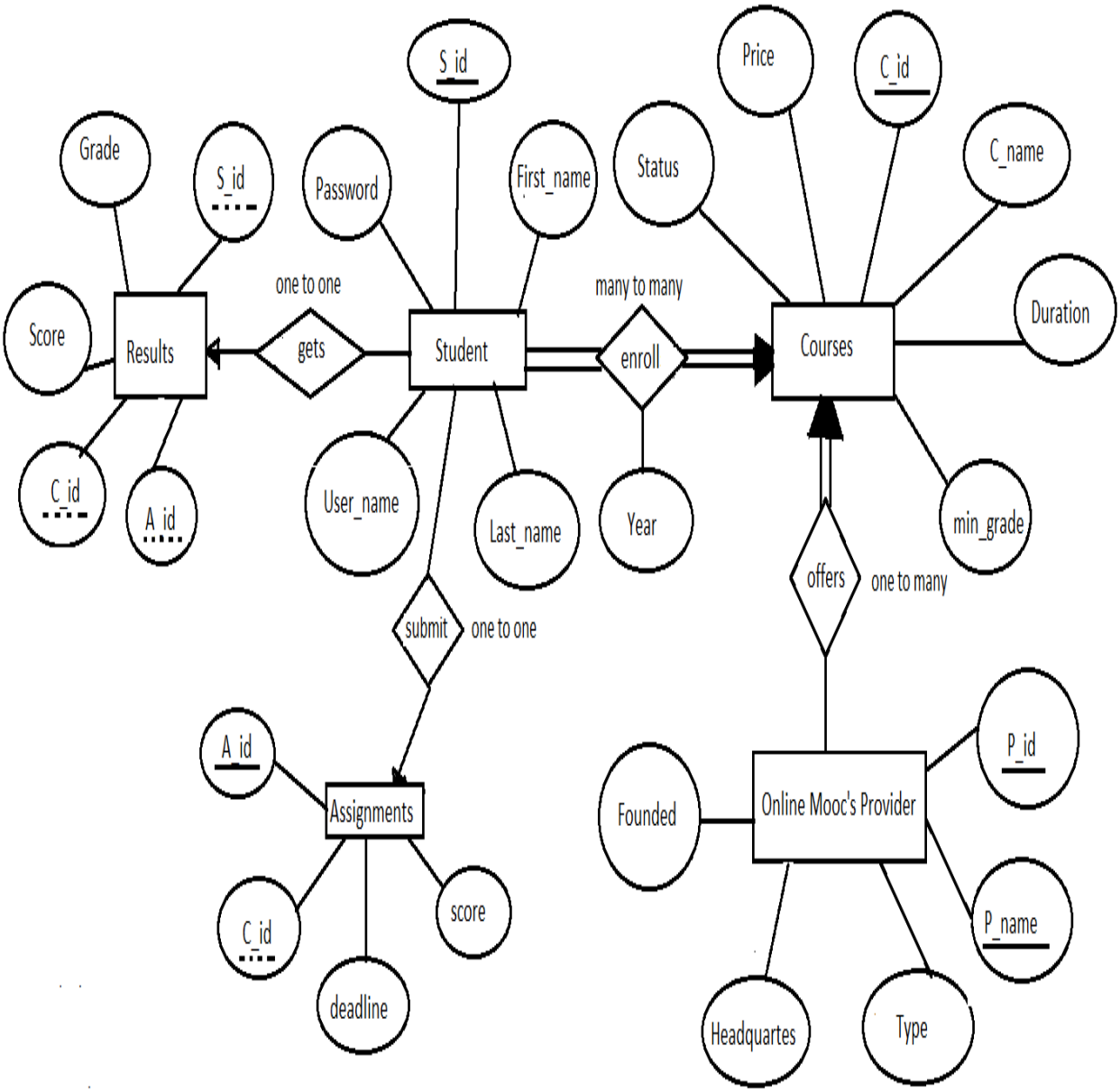
The interface of SQL Plus is used for creating the database. DDL and DML commands are implemented for operations being executed. The details of various Online MOOC's provider, courses, student, assignments, and results are stored in the form of tables in the database.

Eclipse is an integrated development environment(IDE) used in computer programming. It contains a base workspace and an extensible plug-in system for customizing the environment. Eclipse is written mostly in java and its primary use is for developing Java applications, but it may also be used to develop applications in other programming languages via plug-ins, including Erlang, JavaScripts etc.

The front end application code is written in "**Java**" using Eclipse. The portal for front end application is designed through Eclipse, runs and has the capacity to connect with the database which has data inserted using SQL.

➢ DESIGN:

i)ER DIAGRAM:



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MAPPING CARDINALITIES AND PARTICIPATION CONSTRAINTS:

- Online mooc's provider offers as many courses to the students who want to persue the course so, it is a one to many mapping. As it is not necessary that one provider should offer only one course.
- Student enrols into courses, it is many to many mapping as any number of students can enrol into any number of courses.
- Student submits assignment, it is one to one as one student should submit one assignment as per the provider instructions.
- Student gets results if he/submit the assignments and attend the exam, it is one to one mapping as one student get only one result.

DDL Commands:

Creating all the required tables.

```
SQL> create table courses( C_id number(5),C_name varchar2(20),Duration Varchar(20), min_grade Char(10),Status char(10),price Number(3,2));

Table created.

SQL> desc courses;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 C_ID                                               NUMBER(5)
 C_NAME                                             VARCHAR2(20)
 DURATION                                           VARCHAR2(20)
 MIN_GRADE                                          CHAR(10)
 STATUS                                             CHAR(10)
 PRICE                                              NUMBER(3,2)

SQL> create table student( S_id number(5),First_name varchar2(20),Last_name Varchar2(20), User_name varchar2(10),Password varchar2(10),price Number(3,2));

Table created.

SQL> desc student;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 S_ID                                               NUMBER(5)
 FIRST_NAME                                         VARCHAR2(20)
 LAST_NAME                                          VARCHAR2(20)
 USER_NAME                                          VARCHAR2(10)
 PASSWORD                                           VARCHAR2(10)
 PRICE                                              NUMBER(3,2)

SQL> create table results( S_id number(5),C_id number(5),Score varchar2(20),Grade char(20));

Table created.

SQL> desc results;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 S_ID                                               NUMBER(5)
 C_ID                                               NUMBER(5)
 SCORE                                              VARCHAR2(20)
 GRADE                                              CHAR(20)
```

```
SQL> desc assignments;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 A_ID                                               NUMBER(5)
 C_ID                                               NUMBER(5)
 DEADLINE                                           VARCHAR2(20)
 SCORE                                              CHAR(20)

SQL> create table enrolls(S_id Number(5),C_id Number(5),Year Number(5));

Table created.

SQL> desc enrolls;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 S_ID                                               NUMBER(5)
 C_ID                                               NUMBER(5)
 YEAR                                               NUMBER(5)

SQL> alter table Online_Moocs_Provider add primary key(P_id);

Table altered.

SQL> desc Online_Moocs_Provider;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 P_ID                                      NOT NULL NUMBER(5)
 P_NAME                                             VARCHAR2(20)
 TYPE                                               VARCHAR2(20)
 HEADQUARTERS                                       VARCHAR2(20)
 FOUNDED                                            NUMBER(5)

SQL> alter table courses add primary key(C_id);

Table altered.

SQL> alter table Student add primary key (S_id);

Table altered.

SQL> alter table Results add foreign key (S_id,C_id) references _
```


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Enforcing constraints to primary, forein key constraints:

```
SQL> desc Online_Moocs_Provider;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 P_ID                                      NOT NULL NUMBER(5)
 P_NAME                                             VARCHAR2(20)
 TYPE                                               VARCHAR2(20)
 HEADQUARTERS                                       VARCHAR2(20)
 FOUNDED                                            NUMBER(5)

SQL> alter table courses add primary key(C_id);

Table altered.

SQL> alter table Student add primary key (S_id);

Table altered.

SQL> alter table Results add foreign key (S_id,C_id) references student,courses;
alter table Results add foreign key (S_id,C_id) references student,courses
                                                            *
ERROR at line 1:
ORA-01735: invalid ALTER TABLE option


SQL> alter table Results add foreign key (S_id) references student;

Table altered.

SQL> alter table Results add foreign key (C_id) references courses;

Table altered.

SQL> alter table enrolls add foreign key (C_id) references courses;

Table altered.

SQL> alter table enrolls add foreign key (S_id) references student;

Table altered.

SQL> alter table Assignments add foreign key (C_id) references courses;

Table altered.
```

DML commands:

Inserting values into the tables.

```
SQL> Insert into Online_Moocs_Provider values(&P_id,'&P_name','&Type','&headquartes','&founded');
Enter value for p_id: 101
Enter value for p_name: SWAYAM
Enter value for type: Non-profit
Enter value for headquartes: India
Enter value for founded: 2017
old   1: Insert into Online_Moocs_Provider values(&P_id,'&P_name','&Type','&headquartes','&founded')
new   1: Insert into Online_Moocs_Provider values(101,'SWAYAM','Non-profit','India','2017')

1 row created.

SQL> /
Enter value for p_id: 102
Enter value for p_name: Udemy
Enter value for type: Commercial
Enter value for headquartes: USA
Enter value for founded: 2010
old   1: Insert into Online_Moocs_Provider values(&P_id,'&P_name','&Type','&headquartes','&founded')
new   1: Insert into Online_Moocs_Provider values(102,'Udemy','Commercial','USA','2010')

1 row created.

SQL> /
Enter value for p_id: 103
Enter value for p_name: Khanacadamy
Enter value for type: Non-profit
Enter value for headquartes: USA
Enter value for founded: 2006
old   1: Insert into Online_Moocs_Provider values(&P_id,'&P_name','&Type','&headquartes','&founded')
new   1: Insert into Online_Moocs_Provider values(103,'Khanacadamy','Non-profit','USA','2006')

1 row created.

SQL> /
Enter value for p_id: 104
Enter value for p_name: Coursera
Enter value for type: Commercial
Enter value for headquartes: USA
Enter value for founded: 2012
old   1: Insert into Online_Moocs_Provider values(&P_id,'&P_name','&Type','&headquartes','&founded')
new   1: Insert into Online_Moocs_Provider values(104,'Coursera','Commercial','USA','2012')

1 row created.
```

```
SQL> /
Enter value for p_id: 105
Enter value for p_name: Udacity
Enter value for type: Commercial
Enter value for headquartes: USA
Enter value for founded: 2012
old   1: Insert into Online_Moocs_Provider values(&P_id,'&P_name','&Type','&headquartes','&founded')
new   1: Insert into Online_Moocs_Provider values(105,'Udacity','Commercial','USA','2012')

1 row created.
```

DBMS ASSIGNMENT 2

```
SQL> select * from Online_MOOcs_provider;

      P_ID P_NAME               TYPE               HEADQUARTERS
---------- -------------------- ------------------ --------------------
   FOUNDED
----------
       101 SWAYAM               Non-profit         India
      2017

       102 Udemy                Commercial         USA
      2010

       103 Khanacadamy          Non-profit         USA
      2006


      P_ID P_NAME               TYPE               HEADQUARTERS
---------- -------------------- ------------------ --------------------
   FOUNDED
----------
       104 Coursera             Commercial         USA
      2012

       105 Udacity              Commercial         USA
      2012
```

SQL Plus

```
SQL> desc assignments;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 A_ID                                               NUMBER(5)
 C_ID                                               NUMBER(5)
 DEADLINE                                           VARCHAR2(20)
 SCORE                                              CHAR(20)

SQL> alter table assignments add primary key(A_id);

Table altered.

SQL> desc assignments;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 A_ID                                      NOT NULL NUMBER(5)
 C_ID                                               NUMBER(5)
 DEADLINE                                           VARCHAR2(20)
 SCORE                                              CHAR(20)

SQL> alter table results add foreign key(A_id) references assignments;
alter table results add foreign key(A_id) references assignments
                                    *
ERROR at line 1:
ORA-00904: "A_ID": invalid identifier


SQL> alter table results add (A_id Number(5)) ;

Table altered.

SQL> alter table results add foreign key(A_id) references assignments;

Table altered.

SQL> desc results;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 S_ID                                               NUMBER(5)
 C_ID                                               NUMBER(5)
 SCORE                                              VARCHAR2(20)
 GRADE                                              CHAR(20)
 A_ID                                               NUMBER(5)

SQL> desc student;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 S_ID                                      NOT NULL NUMBER(5)
 FIRST_NAME                                         VARCHAR2(20)
 LAST_NAME                                          VARCHAR2(20)
 USER_NAME                                          VARCHAR2(10)
 PASSWORD                                           VARCHAR2(10)
 PRICE                                              NUMBER(3,2)

SQL> alter table students drop column price;
alter table students drop column price
*
ERROR at line 1:
```

```
SQL> insert into courses values(&c_id,'&c_name','&duration','&min_grade','&status',&price);
Enter value for c_id: 2
Enter value for c_name: DAA
Enter value for duration: 8weeks
Enter value for min_grade: D
Enter value for status: yes
Enter value for price: 1000
old   1: insert into courses values(&c_id,'&c_name','&duration','&min_grade','&status',&price)
new   1: insert into courses values(2,'DAA','8weeks','D','yes',1000)

1 row created.

SQL> /
Enter value for c_id: 3
Enter value for c_name: SocialNetworking
Enter value for duration: 10weeks
Enter value for min_grade: C
Enter value for status: No
Enter value for price: 1500
old   1: insert into courses values(&c_id,'&c_name','&duration','&min_grade','&status',&price)
new   1: insert into courses values(3,'SocialNetworking','10weeks','C','No',1500)

1 row created.

SQL> /
Enter value for c_id: 4
Enter value for c_name: AI
Enter value for duration: 20weeks
Enter value for min_grade: D
Enter value for status: yes
Enter value for price: 3500
old   1: insert into courses values(&c_id,'&c_name','&duration','&min_grade','&status',&price)
new   1: insert into courses values(4,'AI','20weeks','D','yes',3500)

1 row created.

SQL> /
Enter value for c_id: 5
Enter value for c_name: C_programmimg
Enter value for duration: 8weeks
Enter value for min_grade: E
Enter value for status: yes
Enter value for price: free
old   1: insert into courses values(&c_id,'&c_name','&duration','&min_grade','&status',&price)
new   1: insert into courses values(5,'C_programmimg','8weeks','E','yes',free)
insert into courses values(5,'C_programmimg','8weeks','E','yes',free)
                                                               *
ERROR at line 1:
ORA-00984: column not allowed here


SQL> /
Enter value for c_id: 5
Enter value for c_name: C_programming
```

```
SQL> /
Enter value for c_id: 5
Enter value for c_name: C_programming
Enter value for duration: 8weeks
Enter value for min_grade: E
Enter value for status: yes
Enter value for price: 0
old   1: insert into courses values(&c_id,'&c_name','&duration','&min_grade','&status',&price)
new   1: insert into courses values(5,'C_programming','8weeks','E','yes',0)

1 row created.

SQL> select *from courses;

     C_ID C_NAME               DURATION            MIN_GRADE  STATUS
--------- -------------------- ------------------- ---------- ----------
    PRICE
----------
        2 DAA                  8weeks              D          yes
     1000

        3 SocialNetworking     10weeks             C          No
     1500

        4 AI                   20weeks             D          yes
     3500


     C_ID C_NAME               DURATION            MIN_GRADE  STATUS
--------- -------------------- ------------------- ---------- ----------
    PRICE
----------
        5 C_programming        8weeks              E          yes
        0

        1 DBMS                 12weeks             D          YES
     1200
```


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SQL Plus

```
---------- -------------------- -------------------- ---------- ----------
        61 Abhiraj              dusari               dusariabhi @bhir@j

SQL> insert into student values (&s_id,'&first_name','&last_name','&user_name','&password');
Enter value for s_id: 72
Enter value for first_name: Hemanth
Enter value for last_name: Sherla
Enter value for user_name: sherla001
Enter value for password: hem@nth
old   1: insert into student values (&s_id,'&first_name','&last_name','&user_name','&password')
new   1: insert into student values (72,'Hemanth','Sherla','sherla001','hem@nth')

1 row created.

SQL> /
Enter value for s_id: 83
Enter value for first_name: mohammad
Enter value for last_name: razzaq
Enter value for user_name: mrazzaq
Enter value for password: r@zz@q
old   1: insert into student values (&s_id,'&first_name','&last_name','&user_name','&password')
new   1: insert into student values (83,'mohammad','razzaq','mrazzaq','r@zz@q')

1 row created.

SQL> /
Enter value for s_id: 94
Enter value for first_name: mallik
Enter value for last_name: reddy
Enter value for user_name: saimallik
Enter value for password: s@im@llik
old   1: insert into student values (&s_id,'&first_name','&last_name','&user_name','&password')
new   1: insert into student values (94,'mallik','reddy','saimallik','s@im@llik')

1 row created.

SQL> /
Enter value for s_id: 105
Enter value for first_name: sujitha
Enter value for last_name: tadi
Enter value for user_name: sujithatadi
Enter value for password: sujith@
old   1: insert into student values (&s_id,'&first_name','&last_name','&user_name','&password')
new   1: insert into student values (105,'sujitha','tadi','sujithatadi','sujith@')
insert into student values (105,'sujitha','tadi','sujithatadi','sujith@')
                                                 *
ERROR at line 1:
ORA-12899: value too large for column "HEMANTH"."STUDENT"."USER_NAME" (actual:
11, maximum: 10)


SQL> /
Enter value for s_id: 105
Enter value for first_name: sujitha
Enter value for last_name: tadi
Enter value for user_name: tsujitha
Enter value for password: sujith@
old   1: insert into student values (&s_id,'&first_name','&last_name','&user_name','&password')
```

```
SQL> /
Enter value for s_id: 105
Enter value for first_name: sujitha
Enter value for last_name: tadi
Enter value for user_name: tsujitha
Enter value for password: sujith@
old   1: insert into student values (&s_id,'&first_name','&last_name','&user_name','&password')
new   1: insert into student values (105,'sujitha','tadi','tsujitha','sujith@')

1 row created.

SQL> select *from student;

      S_ID FIRST_NAME          LAST_NAME           USER_NAME  PASSWORD
---------- ------------------- ------------------- ---------- ----------
        61 Abhiraj             dusari              dusariabhi @bhir@j
        72 Hemanth             Sherla              sherla001  hem@nth
        83 mohammad            razzaq              mrazzaq    r@zz@q
        94 mallik              reddy               saimallik  s@im@llik
       105 sujitha             tadi                tsujitha   sujith@

SQL> desc enrolls;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
```

```
 YEAR                                              NUMBER(5)

SQL> insert into enrolls values(&s_id,&c_id,&year);
Enter value for s_id: 72
Enter value for c_id: 4
Enter value for year: 2018
old   1: insert into enrolls values(&s_id,&c_id,&year)
new   1: insert into enrolls values(72,4,2018)

1 row created.

SQL> /
Enter value for s_id: 94
Enter value for c_id: 5
Enter value for year: 2020
old   1: insert into enrolls values(&s_id,&c_id,&year)
new   1: insert into enrolls values(94,5,2020)

1 row created.

SQL> /
Enter value for s_id: 105
Enter value for c_id: 3
Enter value for year: 2019
old   1: insert into enrolls values(&s_id,&c_id,&year)
new   1: insert into enrolls values(105,3,2019)

1 row created.

SQL> /
Enter value for s_id: 61
Enter value for c_id: 1
Enter value for year: 2019
old   1: insert into enrolls values(&s_id,&c_id,&year)
new   1: insert into enrolls values(61,1,2019)

1 row created.

SQL> /
Enter value for s_id: 83
Enter value for c_id: 2
Enter value for year: 2019
old   1: insert into enrolls values(&s_id,&c_id,&year)
new   1: insert into enrolls values(83,2,2019)

1 row created.

SQL> select * from enrolls;

      S_ID       C_ID       YEAR
---------- ---------- ----------
        72          4       2018
        94          5       2020
       105          3       2019
        61          1       2019
        83          2       2019
```

```
SQL> insert into assgnments values(&a_id,&c_id,'&deadline','&score');
Enter value for a_id: 101
Enter value for c_id: 4
Enter value for deadline: 12-2-2018
Enter value for score: 100
old   1: insert into assgnments values(&a_id,&c_id,'&deadline','&score')
new   1: insert into assgnments values(101,4,'12-2-2018','100')
insert into assgnments values(101,4,'12-2-2018','100')
            *
ERROR at line 1:
ORA-00942: table or view does not exist


SQL> insert into assignments values(&a_id,&c_id,'&deadline','&score');
Enter value for a_id: 101
Enter value for c_id: 4
Enter value for deadline: 12-02-2018
Enter value for score: 100
old   1: insert into assignments values(&a_id,&c_id,'&deadline','&score')
new   1: insert into assignments values(101,4,'12-02-2018','100')

1 row created.

SQL> /
Enter value for a_id: 102
Enter value for c_id: 5
Enter value for deadline: 11-02-2020
Enter value for score: 100
old   1: insert into assignments values(&a_id,&c_id,'&deadline','&score')
new   1: insert into assignments values(102,5,'11-02-2020','100')

1 row created.

SQL> /
Enter value for a_id: 105
Enter value for c_id: 3
Enter value for deadline:
Enter value for score:
old   1: insert into assignments values(&a_id,&c_id,'&deadline','&score')
new   1: insert into assignments values(105,3,'','')

1 row created.

SQL> /
Enter value for a_id: 61
Enter value for c_id: 1
Enter value for deadline: 15-02-2019
Enter value for score: 80
old   1: insert into assignments values(&a_id,&c_id,'&deadline','&score')
new   1: insert into assignments values(61,1,'15-02-2019','80')

1 row created.
```

```
SQL> update assignments SET '&deadline' where a_id=105 and c_id=3;
Enter value for deadline: 12-02-2019
old   1: update assignments SET '&deadline' where a_id=105 and c_id=3
new   1: update assignments SET '12-02-2019' where a_id=105 and c_id=3
update assignments SET '12-02-2019' where a_id=105 and c_id=3
                       *
ERROR at line 1:
ORA-01747: invalid user.table.column, table.column, or column specification


SQL> update assignments SET deadline ='&deadline' where a_id=105 and c_id=3;
Enter value for deadline: 12-08-2019
old   1: update assignments SET deadline ='&deadline' where a_id=105 and c_id=3
new   1: update assignments SET deadline ='12-08-2019' where a_id=105 and c_id=3

1 row updated.

SQL> update assignments SET score =&score where a_id=105 and c_id=3;
Enter value for score: 100
old   1: update assignments SET score =&score where a_id=105 and c_id=3
new   1: update assignments SET score =100 where a_id=105 and c_id=3

1 row updated.

SQL> delete from assignments where a_id=23;

1 row deleted.

SQL> select * from assignments;

      A_ID       C_ID DEADLINE            SCORE
---------- ---------- -------------------- --------------------
       101          4 12-02-2018           100
       102          5 11-02-2020           100
       105          3 12-08-2019           100
        61          1 15-02-2019           80
        83          2 20-02-2019           75

SQL> _
```

```
SQL> desc results;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 S_ID                                               NUMBER(5)
 C_ID                                               NUMBER(5)
 SCORE                                              VARCHAR2(20)
 GRADE                                              CHAR(20)
 A_ID                                               NUMBER(5)

SQL> insert into results values(&s_id,&c_id,'&score','&char',&a_id);
Enter value for s_id: 72
Enter value for c_id: 4
Enter value for score: 92
Enter value for char: A
Enter value for a_id: 101
old   1: insert into results values(&s_id,&c_id,'&score','&char',&a_id)
new   1: insert into results values(72,4,'92','A',101)

1 row created.

SQL> /
Enter value for s_id: 94
Enter value for c_id: 5
Enter value for score: 82
Enter value for char: B
Enter value for a_id: 102
old   1: insert into results values(&s_id,&c_id,'&score','&char',&a_id)
new   1: insert into results values(94,5,'82','B',102)

1 row created.

SQL> /
Enter value for s_id: 105
Enter value for c_id: 3
Enter value for score: 95
Enter value for char: A
Enter value for a_id: 105
old   1: insert into results values(&s_id,&c_id,'&score','&char',&a_id)
new   1: insert into results values(105,3,'95','A',105)

1 row created.

SQL> /
Enter value for s_id: 61
Enter value for c_id: 1
Enter value for score: 91
Enter value for char: A
Enter value for a_id: 61
old   1: insert into results values(&s_id,&c_id,'&score','&char',&a_id)
new   1: insert into results values(61,1,'91','A',61)

1 row created.

SQL> /
Enter value for s_id: 83
Enter value for c_id: 2
Enter value for score: 67
Enter value for char: D
Enter value for a_id: 83
old   1: insert into results values(&s_id,&c_id,'&score','&char',&a_id)
new   1: insert into results values(83,2,'67','D',83)

1 row created.

SQL> select
```


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```
SQL> insert into results values(&s_id,&c_id,'&score','&char',&a_id);
Enter value for s_id: 72
Enter value for c_id: 4
Enter value for score: 92
Enter value for char: A
Enter value for a_id: 101
old   1: insert into results values(&s_id,&c_id,'&score','&char',&a_id)
new   1: insert into results values(72,4,'92','A',101)

1 row created.

SQL> /
Enter value for s_id: 94
Enter value for c_id: 5
Enter value for score: 82
Enter value for char: B
Enter value for a_id: 102
old   1: insert into results values(&s_id,&c_id,'&score','&char',&a_id)
new   1: insert into results values(94,5,'82','B',102)

1 row created.

SQL> /
Enter value for s_id: 105
Enter value for c_id: 3
Enter value for score: 95
Enter value for char: A
Enter value for a_id: 105
old   1: insert into results values(&s_id,&c_id,'&score','&char',&a_id)
new   1: insert into results values(105,3,'95','A',105)

1 row created.

SQL> /
Enter value for s_id: 61
Enter value for c_id: 1
Enter value for score: 91
Enter value for char: A
Enter value for a_id: 61
old   1: insert into results values(&s_id,&c_id,'&score','&char',&a_id)
new   1: insert into results values(61,1,'91','A',61)

1 row created.

SQL> /
Enter value for s_id: 83
Enter value for c_id: 2
Enter value for score: 67
Enter value for char: D
Enter value for a_id: 83
old   1: insert into results values(&s_id,&c_id,'&score','&char',&a_id)
new   1: insert into results values(83,2,'67','D',83)

1 row created.

SQL> select * from results;

      S_ID       C_ID SCORE                GRADE                     A_ID
---------- ---------- -------------------- -------------------- ----------
        72          4 92                   A                          101
        94          5 82                   B                          102
       105          3 95                   A                          105
        61          1 91                   A                           61
        83          2 67                   D                           83

SQL>
```


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Implementation

➢ Front end programs:

1)Insert a Student:

```
import java.awt.*;
import java.awt.event.*;
import java.sql.*;
public class InsertStudent extends Panel
{
    Button insertStudentButton;
    TextField sidText, fnameText, lnameText,unameText, passwordText;
    TextArea errorText;
    Connection connection;
    Statement statement;
    public InsertStudent()
    {
        try
        {
            Class.forName("oracle.jdbc.driver.OracleDriver");
        }
        catch (Exception e)
        {
            System.err.println("Unable to find and load driver");
            System.exit(1);
        }
        connectToDB();
    }
    public void connectToDB()
   {
```

```
            try
            {
             connection =
DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:orcl","hemanth","orac
le");
             statement = connection.createStatement();

            }
            catch (SQLException connectException)
            {
             System.out.println(connectException.getMessage());
             System.out.println(connectException.getSQLState());
             System.out.println(connectException.getErrorCode());
             System.exit(1);
            }
  }
    public void buildGUI()
    {
            //Handle Insert Account Button
            insertStudentButton = new Button("Submit");
            insertStudentButton.addActionListener(new ActionListener()
            {
                    public void actionPerformed(ActionEvent e)
                    {
                            try
                            {
                             Statement statement = connection.createStatement();
```

```
                    String query= "INSERT INTO student VALUES(" +
sidText.getText() + ", " + "'" + fnameText.getText() + "'," + "'" + lnameText.getText() +
"','"+"'"+unameText.getText()+"'," +"'"+passwordText.getText()+"'"+")";
                     int i = statement.executeUpdate(query);
                     errorText.append("\nInserted " + i + " rows successfully");
                    }
                    catch (SQLException insertException)
                    {
                     displaySQLErrors(insertException);
                    }
            }
        });


        fnameText = new TextField(15);
        sidText = new TextField(15);
        lnameText = new TextField(15);
        unameText = new TextField(15);
        passwordText = new TextField(15);


        errorText = new TextArea(10,40);
        errorText.setEditable(false);

        Panel first = new Panel();
        first.setLayout(new GridLayout(5,2));
        first.add(new Label("Student ID:"));
        first.add(sidText);
        first.add(new Label("FirstName:"));
```

```
        first.add(fnameText);
        first.add(new Label("LastName:"));
        first.add(lnameText);
        first.add(new Label("Username:"));
        first.add(unameText);
        first.add(new Label("Password:"));
        first.add(passwordText);

        first.setBounds(125,90,300,150);

        Panel second = new Panel(new GridLayout(4, 1));
        second.add(insertStudentButton);
        second.setBounds(195,290,150,100);

        Panel third = new Panel();
        third.add(errorText);
        third.setBounds(80,410,430,300);
        setLayout(null);



        add(first);
        add(second);
        add(third);

        setSize(400,180);
        setVisible(true);
    }
```

```
    private void displaySQLErrors(SQLException e)
    {
        errorText.append("\nSQLException: " + e.getMessage() + "\n");
        errorText.append("SQLState:     " + e.getSQLState() + "\n");
        errorText.append("VendorError:  " + e.getErrorCode() + "\n");
    }



    public static void main(String[] args)
    {
        InsertStudent ins = new InsertStudent();
        ins.buildGUI();
    }
}
```

2)Delete a Student:

```
import java.awt.*;
import java.awt.event.*;
import java.sql.*;
public class DeleteStudent extends Panel{
    Button deleteStudentButton;
    List studentIDList;
    TextField sidText, fnameText, lnameText, unameText,passwordText;
    TextArea errorText;
```

```
        Connection connection;
        Statement statement;
        ResultSet rs;


        public DeleteStudent()
        {
                try
                {
                        Class.forName("oracle.jdbc.driver.OracleDriver");
                }
                catch (Exception e)
                {
                        System.err.println("Unable to find and load driver");
                        System.exit(1);
                }
                connectToDB();
        }


        public void connectToDB()
  {
                try
                {
                  connection =
DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:orcl","hemanth","oracle")
;
```

```
                statement = connection.createStatement();


            }
            catch (SQLException connectException)
            {
              System.out.println(connectException.getMessage());
              System.out.println(connectException.getSQLState());
              System.out.println(connectException.getErrorCode());
              System.exit(1);
            }
}
    private void loadStudent()
    {
            try
            {
              rs = statement.executeQuery("SELECT * FROM STUDENT");
              while (rs.next())
              {
                    studentIDList.add(rs.getString("S_ID"));
              }
            }
            catch (SQLException e)
            {
              displaySQLErrors(e);
```

```
            }
        }

        public void buildGUI()
        {
           studentIDList = new List(10);
                loadStudent();
                add(studentIDList);

                //When a list item is selected populate the text fields
                studentIDList.addItemListener(new ItemListener()
                {
                        public void itemStateChanged(ItemEvent e)
                        {
                                try
                                {
                                        rs = statement.executeQuery("SELECT * FROM
STUDENT");
                                        while (rs.next())
                                        {
                                                if
(rs.getString("S_ID").equals(studentIDList.getSelectedItem()))
                                                break;
                                        }
                                        if (!rs.isAfterLast())
```

```
                {
                        sidText.setText(rs.getString("S_ID"));
                        fnameText.setText(rs.getString("First_NAME"));
                        lnameText.setText(rs.getString("Last_Name"));
                        unameText.setText(rs.getString("User_Name"));
passwordText.setText(rs.getString("Password"));

                }
            }
            catch (SQLException selectException)
            {
                displaySQLErrors(selectException);
            }
        }
    });
    deleteStudentButton = new Button("Delete");
    deleteStudentButton.addActionListener(new ActionListener()
    {
        public void actionPerformed(ActionEvent e)
        {
            try
            {
                Statement statement = connection.createStatement();
```

```
                                int i = statement.executeUpdate("DELETE FROM
student WHERE S_ID = "
                                                + studentIDList.getSelectedItem());
                                errorText.append("\nDeleted " + i + " rows
successfully");
                                sidText.setText(null);
                                fnameText.setText(null);
                                lnameText.setText(null);
                                unameText.setText(null);
                                passwordText.setText(null);
                                studentIDList.removeAll();
                                loadStudent();
                        }
                        catch (SQLException insertException)
                        {
                                displaySQLErrors(insertException);
                        }
                }
        });

        sidText = new TextField(15);
        fnameText = new TextField(15);
        lnameText = new TextField(15);
        unameText = new TextField(15);
        passwordText= new TextField(15);
```

```
errorText = new TextArea(10, 40);
errorText.setEditable(false);

Panel first = new Panel();
first.setLayout(new GridLayout(6, 1));
first.add(new Label("Student ID:"));
first.add(sidText);
sidText.setEditable(false);
first.add(new Label("FirstName:"));
first.add(fnameText);
fnameText.setEditable(false);
first.add(new Label("LastName:"));
first.add(lnameText);
lnameText.setEditable(false);
first.add(new Label("Username:"));
first.add(unameText);
unameText.setEditable(false);
first.add(new Label("password:"));
first.add(passwordText);
passwordText.setEditable(false);
```

```
        Panel second = new Panel(new GridLayout(4, 1));
        second.add(deleteStudentButton);

        Panel third = new Panel();
        third.add(errorText);

        add(first);
        add(second);
        add(third);
        setSize(450, 600);
        setLayout(new FlowLayout());
        setVisible(true);
    }
    private void displaySQLErrors(SQLException e)
    {
        errorText.append("\nSQLException: " + e.getMessage() + "\n");
        errorText.append("SQLState:     " + e.getSQLState() + "\n");
        errorText.append("VendorError:  " + e.getErrorCode() + "\n");
    }
    public static void main(String[] args)
    {
        DeleteStudent dels = new DeleteStudent();
        dels.buildGUI();
    }
```

```
}
```

3) Update a Student:

```
import java.awt.*;

import java.awt.event.*;

import java.sql.*;

public class UpdateStudent extends Panel

{

        Button updateStudentButton;

        List studentIDList;

        TextField sidText,fnameText,lnameText,unameText,passwordText;

        TextArea errorText;

        Connection connection;

        Statement statement;

        ResultSet rs;


        public UpdateStudent()


        {

                try

                {

                        Class.forName("oracle.jdbc.driver.OracleDriver");

                }

                catch (Exception e)

                {
```

```
                System.err.println("Unable to find and load driver");
                System.exit(1);
            }
            connectToDB();
        }

        public void connectToDB()
  {
            try
            {
              connection =
DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:orcl","hemanth","oracle")
;
              statement = connection.createStatement();

            }
            catch (SQLException connectException)
            {
              System.out.println(connectException.getMessage());
              System.out.println(connectException.getSQLState());
              System.out.println(connectException.getErrorCode());
              System.exit(1);
            }
  }
```

```
private void loadStudent()
{
        try
        {
          rs = statement.executeQuery("SELECT S_ID FROM STUDENT");
          while (rs.next())
          {
                studentIDList.add(rs.getString("S_ID"));
          }
        }
        catch (SQLException e)
        {
          displaySQLErrors(e);
        }
}

public void buildGUI()
{
   studentIDList = new List(10);
        loadStudent();
        add(studentIDList);

        //When a list item is selected populate the text fields
        studentIDList.addItemListener(new ItemListener()
```

```
{
public void itemStateChanged(ItemEvent e)
{
    try
    {
        rs = statement.executeQuery("SELECT * FROM Student");
        while (rs.next())
        {
            if
(rs.getString("S_ID").equals(studentIDList.getSelectedItem()))
            break;
        }
        if (!rs.isAfterLast())
        {
            sidText.setText(rs.getString("S_ID"));
            fnameText.setText(rs.getString("First_NAME"));
            lnameText.setText(rs.getString("Last_name"));
            unameText.setText(rs.getString("USER_NAME"));
            passwordText.setText(rs.getString("PASSWORD"));
        }
    }
        catch (SQLException selectException)
        {
            displaySQLErrors(selectException);
        }
```

```
                }
        });



        //Handle Update Sailor Button
        updateStudentButton = new Button("Modify");
        updateStudentButton.addActionListener(new ActionListener()
        {
                public void actionPerformed(ActionEvent e)
                {
                        try
                        {
                                Statement statement = connection.createStatement();
                                int i = statement.executeUpdate("UPDATE  STUDENT
SET First_name='" + fnameText.getText() + "', Last_name='" + lnameText.getText() + "', "
                                + "User_name
='"+unameText.getText()+"',"+"password ='"+passwordText.getText()+"'"+" WHERE S_id ="
                                + studentIDList.getSelectedItem());
                                errorText.append("\nUpdated " + i + " rows
successfully");
                                studentIDList.removeAll();
                                loadStudent();
                        }
                        catch (SQLException insertException)
                        {
                                displaySQLErrors(insertException);
```

```
                    }
                }
            });

            sidText = new TextField(15);
            sidText.setEditable(false);
            fnameText = new TextField(15);
            lnameText = new TextField(15);
            unameText = new TextField(15);
            passwordText=new TextField(15);

            errorText = new TextArea(10, 40);
            errorText.setEditable(false);

            Panel first = new Panel();
            first.setLayout(new GridLayout(5, 2));
            first.add(new Label("Student ID:"));
            first.add(sidText);
            first.add(new Label("FirstName:"));
            first.add(fnameText);
            first.add(new Label("Lastname:"));
            first.add(lnameText);
            first.add(new Label("Username:"));
            first.add(unameText);
```

```
        first.add(new Label("Password:"));
        first.add(passwordText);

        Panel second = new Panel(new GridLayout(5, 1));
        second.add(updateStudentButton);

        Panel third = new Panel();
        third.add(errorText);

        add(first);
        add(second);
        add(third);

        setSize(500, 600);
        setLayout(new FlowLayout());
        setVisible(true);

}

private void displaySQLErrors(SQLException e)
{
        errorText.append("\nSQLException: " + e.getMessage() + "\n");
        errorText.append("SQLState:     " + e.getSQLState() + "\n");
        errorText.append("VendorError:  " + e.getErrorCode() + "\n");
```

```
        }


        public static void main(String[] args)
        {
                UpdateStudent us = new UpdateStudent();




                us.buildGUI();
        }
}
```

4)Main method

```
import java.awt.*;
import java.awt.event.*;


class OnlineMoocsProvider extends Frame implements ActionListener
{
        String msg = "";
        Label ll,l2;


        CardLayout cardLO;


        //Create Panels for each of the menu items, welcome screen panel and home screen panel with CardLayout
        InsertProvider provide;
        UpdateProvider upp;
```

```
DeleteProvider delp;

InsertCourses inc;

UpdateCourses upc;

DeleteCourses delc;

InsertStudent ins;

DeleteStudent dels;

UpdateStudent us;

Enroll mks;

UpdateEnroll upe;

DeleteEnroll dele;

InsertAssignments ina;

UpdateAssignments upa;

DeleteAssignment dela;

InsertResults inr;

DeleteResults delr;

UpdateResults upr;


 Panel home,welcome;


OnlineMoocsProvider()

{
                cardLO = new CardLayout();


                //Create an empty home panel and set its layout to card layout
```

```
home = new Panel();

home.setLayout(cardLO);



ll = new Label();

l2 =new Label();

ll.setAlignment(Label.CENTER);

l2.setAlignment(Label.CENTER);

ll.setText("Welcome to Online MOOC's Provider");

l2.setText("All @rights are reserved");

//Create welcome panel and add the label to it

welcome = new Panel();

welcome.add(ll);

welcome.add(l2);


//create panels for each of our menu items and build them with respective components

provide = new InsertProvider(); provide.buildGUI();

upp = new UpdateProvider();  upp.buildGUI();

delp = new DeleteProvider();  delp.buildGUI();

inc = new InsertCourses();inc.buildGUI();

upc= new UpdateCourses();upc.buildGUI();

delc = new DeleteCourses();delc.buildGUI();

ins = new InsertStudent();ins.buildGUI();

dels = new DeleteStudent();dels.buildGUI();
```

```
us= new UpdateStudent();us.buildGUI();

mks= new Enroll();      mks.buildGUI();

upe= new UpdateEnroll();upe.buildGUI();

dele = new DeleteEnroll(); dele.buildGUI();

ina = new InsertAssignments();ina.buildGUI();

upa = new UpdateAssignments();upa.buildGUI();

dela = new DeleteAssignment();dela.buildGUI();

inr = new InsertResults();inr.buildGUI();

delr = new DeleteResults();delr.buildGUI();

upr = new UpdateResults();upr.buildGUI();



//add all the panels to the home panel which has a cardlayout

home.add(welcome, "Welcome");

home.add(provide, "InsertProvider");

home.add(upp, "UpdateProvider");

home.add(delp, "DeleteProvider");

home.add(inc,"InsertCourses");

home.add(upc,"UpdateCourses");

home.add(delc,"DeleteCourses");

home.add(ins,"InsertStudent");

home.add(dels,"DeleteStudent");

home.add(us,"UpdateStudent");

home.add(mks,"Enroll");
```

```
home.add(upe,"UpdateEnroll");

home.add(dele,"DeleteEnroll");

home.add(ina,"InsertAssignments");

home.add(upa,"UpdateAssignments");

home.add(dela,"DeleteAssignment");

home.add(inr,"InsertResults");

home.add(delr,"DeleteResults");

home.add(upr,"UpdateResults");









//home.add(upb, "UpdateBoat");

//home.add(mks, "MakeReserve");


// add home panel to main frame

add(home);


// create menu bar and add it to frame

MenuBar mbar = new MenuBar();

setMenuBar(mbar);


// create the menu items and add it to Menu
```

```
Menu provider = new Menu("OnlineMOOC'sProvider");
MenuItem item1, item2, item3;
provider.add(item1 = new MenuItem("Insert Provider"));
provider.add(item2 = new MenuItem("View Provider"));
provider.add(item3 = new MenuItem("Delete Provider"));
mbar.add(provider);

Menu courses = new Menu("Courses");
MenuItem item4, item5, item6;
courses.add(item4 = new MenuItem("Insert Courses"));
courses.add(item5 = new MenuItem("View Courses"));
courses.add(item6 = new MenuItem("Delete Courses"));
mbar.add(courses);

Menu student = new Menu("Student");
MenuItem item7, item8, item9;
student.add(item7 = new MenuItem("Insert Student"));
student.add(item8 = new MenuItem("View Student"));
student.add(item9 = new MenuItem("Delete Student"));
mbar.add(student);

Menu enroll= new Menu("Enroll");
MenuItem item10, item11, item12;
enroll.add(item10 = new MenuItem("Insert Enroll"));
```

```
enroll.add(item11= new MenuItem("View Enroll"));
enroll.add(item12 = new MenuItem("Delete Enroll"));
mbar.add(enroll);

Menu assignments= new Menu("Assignments");
MenuItem item13, item14, item15;
assignments.add(item13 = new MenuItem("Insert Assignments"));
assignments.add(item14= new MenuItem("View Assignments"));
assignments.add(item15 = new MenuItem("Delete Assignment"));
mbar.add(assignments);

Menu results= new Menu("Results");
MenuItem item16, item17, item18;
results.add(item16 = new MenuItem("Insert Results"));
results.add(item17= new MenuItem("View Results"));
results.add(item18 = new MenuItem("Delete Results"));
mbar.add(results);

// register listeners
item1.addActionListener(this);
item2.addActionListener(this);
item3.addActionListener(this);
item4.addActionListener(this);
item5.addActionListener(this);
```

```
item6.addActionListener(this);

item7.addActionListener(this);

item8.addActionListener(this);

item9.addActionListener(this);

item10.addActionListener(this);

item11.addActionListener(this);

item12.addActionListener(this);

item13.addActionListener(this);

item14.addActionListener(this);

item15.addActionListener(this);

item16.addActionListener(this);

item17.addActionListener(this);

item18.addActionListener(this);


 // Anonymous inner class which extends WindowAdaptor to handle the Window event: windowClosing

addWindowListener(new WindowAdapter(){

        public void windowClosing(WindowEvent we)

        {

                System.exit(0);

        }

});


//Frame properties

setTitle("Online MOOC's Provider");
```

```
                Color clr = new Color(50, 150, 100);
                setBackground(clr);
                setFont(new Font("Monaco", Font.BOLD, 20));
                setSize(900, 1000);

                setVisible(true);

 }
public void actionPerformed(ActionEvent ae)
 {
          String arg = ae.getActionCommand();
          if(arg.equals("Insert Provider"))
          {
         cardLO.show(home, "InsertProvider");
           }

          else if(arg.equals("View Provider"))
          {
                cardLO.show(home, "UpdateProvider");
          }

          else if(arg.equals("Delete Provider"))
          {
                cardLO.show(home, "DeleteProvider");
```

```
}
else if(arg.equals("Insert Courses"))
{

        cardLO.show(home, "InsertCourses");
}
else if(arg.equals("Delete Courses"))
{

        cardLO.show(home, "DeleteCourses");
}
else if(arg.equals("View Courses"))
{

        cardLO.show(home, "UpdateCourses");
}
else if(arg.equals("Insert Student"))
{
        cardLO.show(home, "InsertStudent");
}
else if(arg.equals("Delete Student"))
{
        cardLO.show(home, "DeleteStudent");
}
```

```
else if(arg.equals("View Student"))
{
        cardLO.show(home, "UpdateStudent");
}
else if(arg.equals("Insert Enroll"))
{
        cardLO.show(home, "Enroll");
}
else if(arg.equals("View Enroll"))
{
        cardLO.show(home, "UpdateEnroll");
}
else if(arg.equals("Delete Enroll"))
{
        cardLO.show(home, "DeleteEnroll");
}
else if(arg.equals("Insert Assignments"))
{
        cardLO.show(home, "InsertAssignments");
}
else if(arg.equals("View Assignments"))
{
        cardLO.show(home, "UpdateAssignments");
}
```

```
                else if(arg.equals("Insert Results"))
                {
                        cardLO.show(home, "InsertResults");
                }
                else if(arg.equals("View Results"))
                {
                        cardLO.show(home, "UpdateResults");
                }
                else if(arg.equals("Delete Results"))
                {
                        cardLO.show(home, "DeleteResults");
                }

        }
        public static void main(String ... args)
        {
                new OnlineMoocsProvider();
        }
}
```

Connectivity with the Database:

Java Database Connectivity (JDBC) is an application programming interface (API) for the programming language Java, which defines how a client may access a database. It is a Java-based data access technology used for Java database connectivity. It is part of the Java Standard Edition platform, from Oracle Corporation. It provides methods to query and update data in a database and is oriented towards relational databases.

Block of code for JAVA- SQL connectivity with JDBC:

```
public void connectToDB()
    {
        try
        {

    connection=DriverManager.getConnection("jdbc:oracle:thin:@localhost:
1521:orcl","hemanth","oracle");
            statement=connection.createStatement();
        }
        catch(SQLException connectException)
        {
            System.out.println(connectException.getMessage());
            System.out.println(connectException.getSQLState());
            System.out.println(connectException.getErrorCode());
            System.exit(1);
        }
    }
```

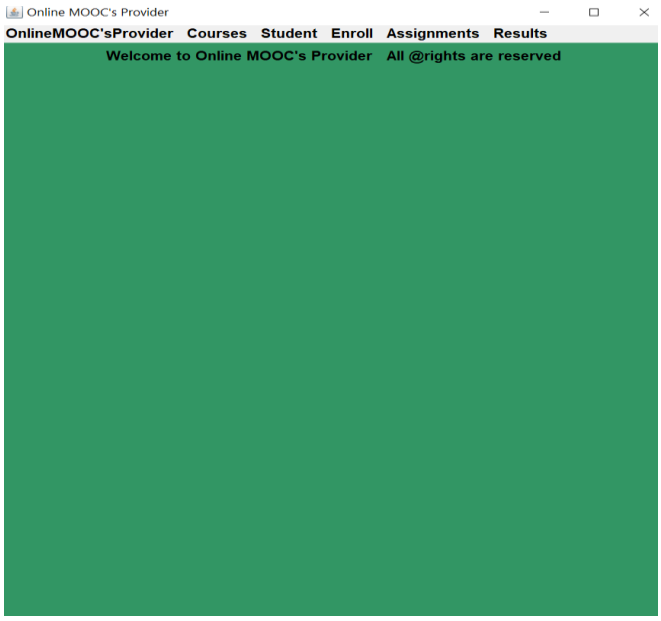
GITHUB LINK:

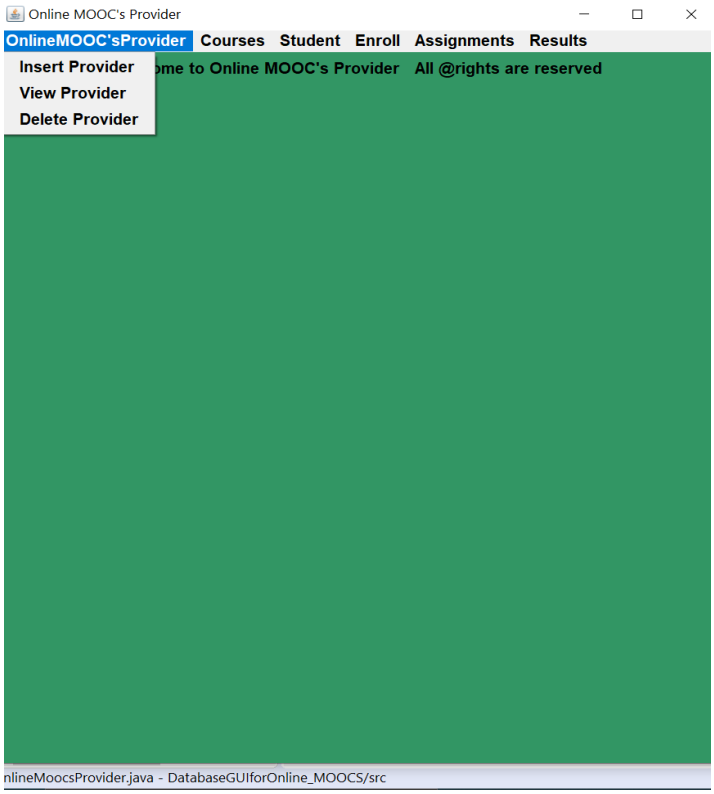
https://github.com/sherlahemanth001/DBMS-project.git

TESTING

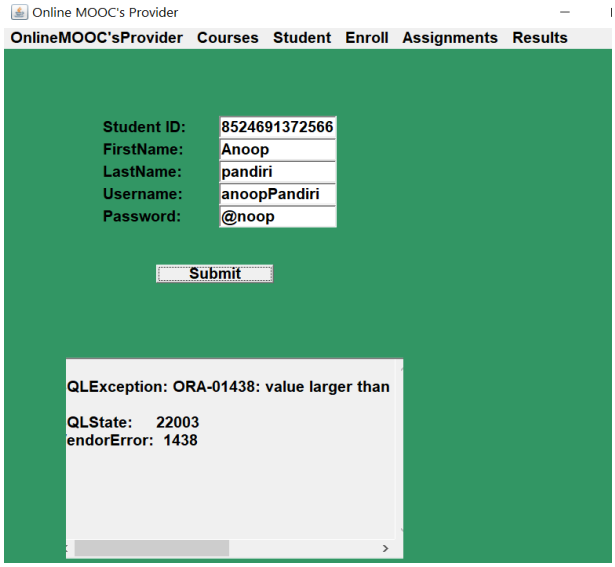
The program runs for execution of three basic operations of insertion, update and delete on 5 different table. Along with this, it also has a output column which gives the information about how many rows have been edited. Errors, syntactical or exceptional will be shown if occurred.

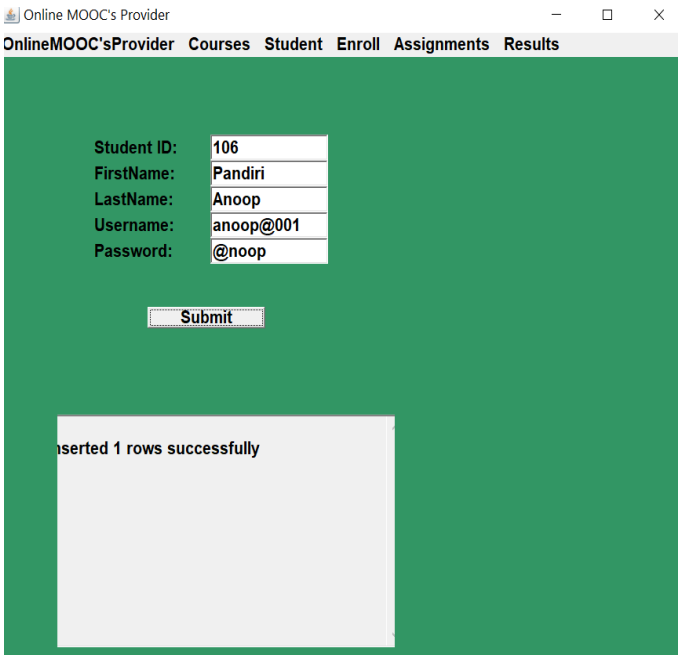
HOME PAGE:





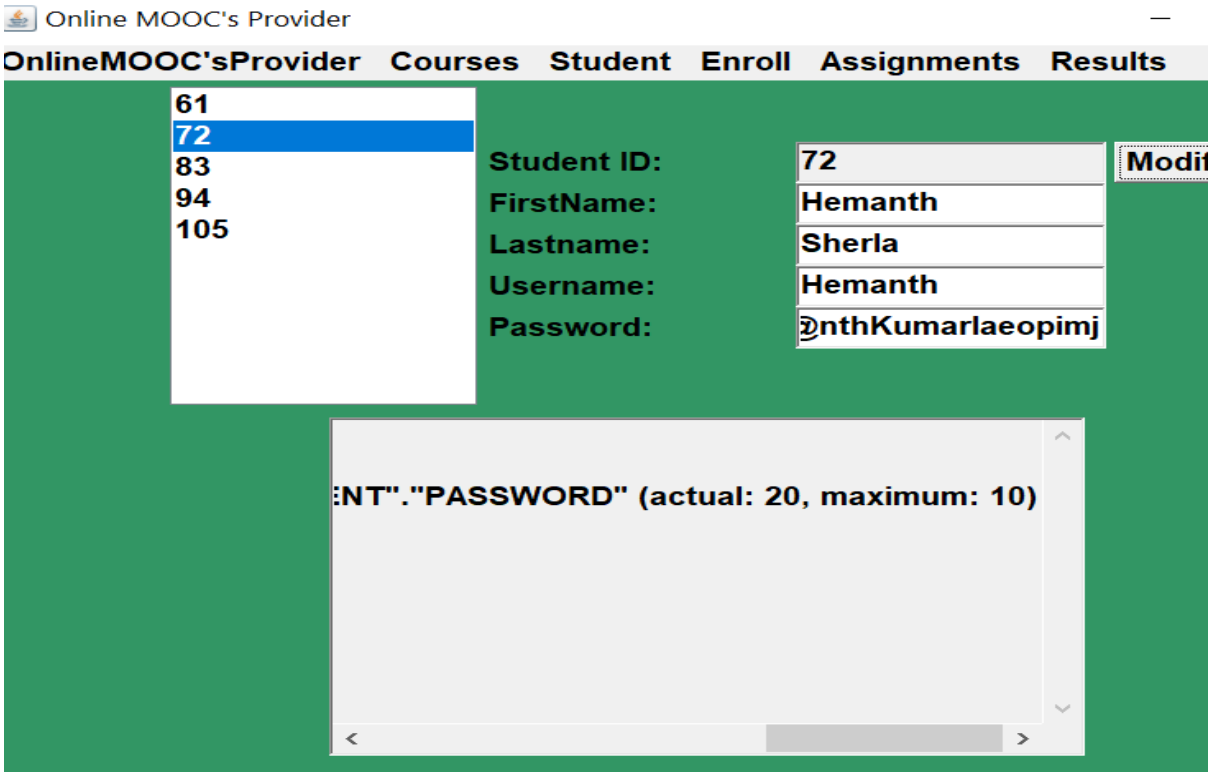
INSERT STUDENT:

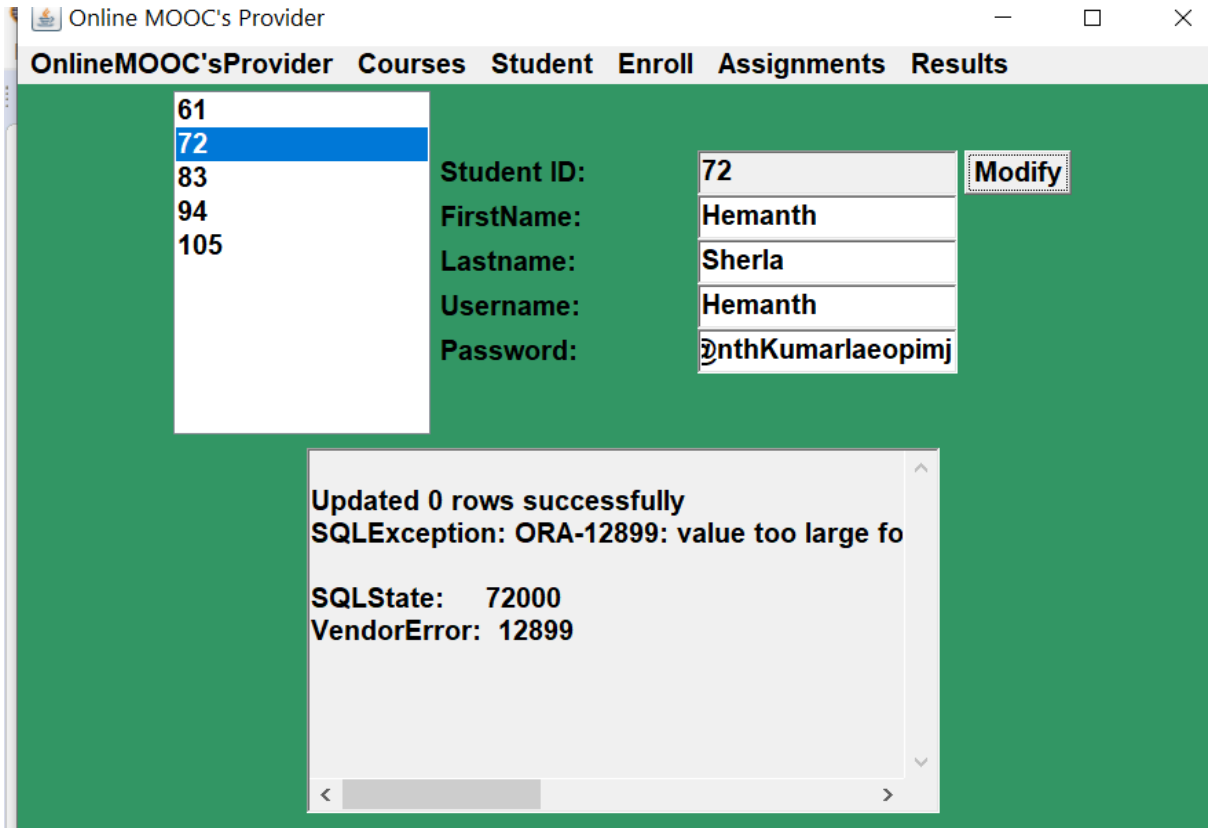


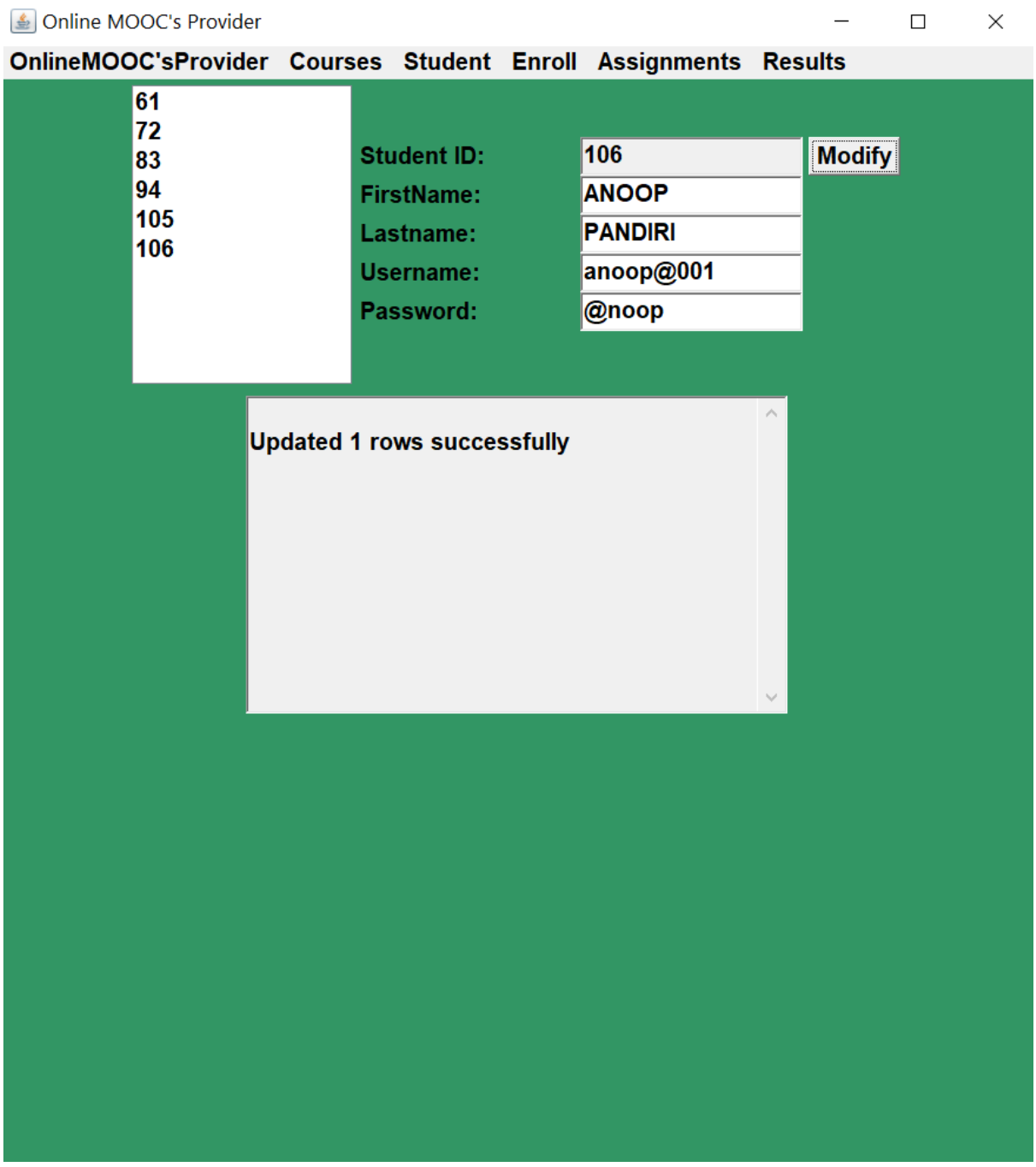



```
SQL> select * from student;

      S_ID FIRST_NAME           LAST_NAME           USER_NAME  PASSWORD
---------- -------------------- -------------------- ---------- ----------
       105 Sujitha              Tadi                SujithaT   @sujith@
        83 mohammad             razzaq              Mohammad   r@zz@q
        94 mallik               reddy               saimallik  s@im@llik
       106 Pandiri              Anoop               anoop@001  @noop
        61 Abhiraj              dusari              dusariabhi @bhir@j
        72 Hemanth              Sherla              Hemanth    Hem@nth

6 rows selected.

SQL>
```

UPDATE STUDENT:

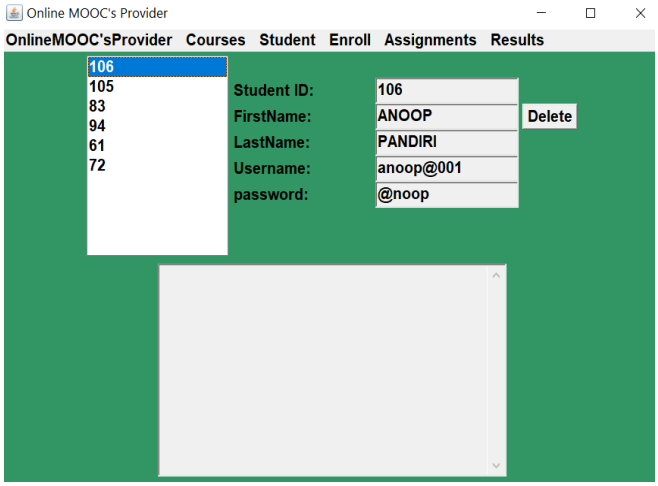


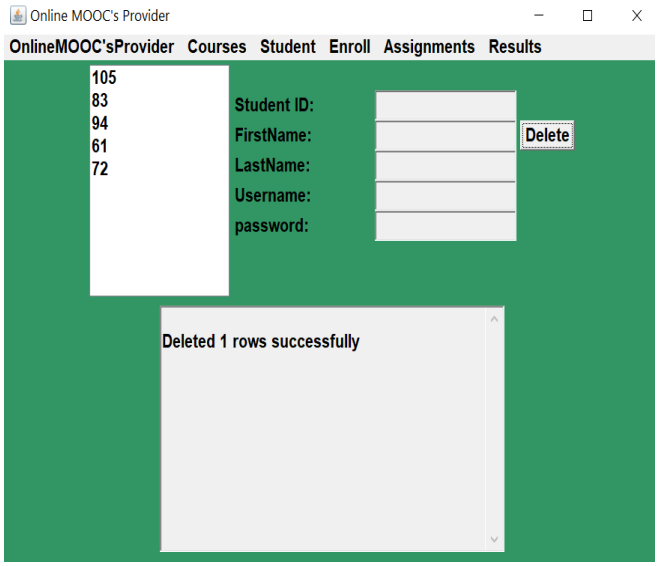





```
SQL> SELECT * FROM STUDENT;

      S_ID FIRST_NAME           LAST_NAME            USER_NAME  PASSWORD
---------- -------------------- -------------------- ---------- ----------
       105 Sujitha              Tadi                 SujithaT   @sujith@
        83 mohammad             razzaq               Mohammad   r@zz@q
        94 mallik               reddy                saimallik  s@im@llik
       106 ANOOP                PANDIRI              anoop@001  @noop
        61 Abhiraj              dusari               dusariabhi @bhir@j
        72 Hemanth              Sherla               Hemanth    Hem@nth

6 rows selected.
```

DELETE STUDENT:






```
SQL> SELECT * FROM STUDENT;

      S_ID FIRST_NAME           LAST_NAME           USER_NAME  PASSWORD
---------- -------------------- -------------------- ---------- ----------
       105 Sujitha              Tadi                SujithaT   @sujith@
        83 mohammad             razzaq              Mohammad   r@zz@q
        94 mallik               reddy               saimallik  s@im@llik
       106 ANOOP                PANDIRI             anoop@001  @noop
        61 Abhiraj              dusari              dusariabhi @bhir@j
        72 Hemanth              Sherla              Hemanth    Hem@nth

5 rows selected.

SQL> SELECT * FROM STUDENT;

      S_ID FIRST_NAME           LAST_NAME           USER_NAME  PASSWORD
---------- -------------------- -------------------- ---------- ----------
       105 Sujitha              Tadi                SujithaT   @sujith@
        83 mohammad             razzaq              Mohammad   r@zz@q
        94 mallik               reddy               saimallik  s@im@llik
        61 Abhiraj              dusari              dusariabhi @bhir@j
        72 Hemanth              Sherla              Hemanth    Hem@nth

SQL>
```

RESULTS

The DML commands, Insert, update and delete for one of the tables in given below:

For student table: (in java, as per the application)

Insert:
```
"INSERT INTO student VALUES(" + sidText.getText() + ", " + "'" + fnameText.getText() + "'," + "'" + lnameText.getText() + "',"+"'"+unameText.getText()+"',"+"'"+passwordText.getText()+"'"+")";
```

Update:
```
"UPDATE  STUDENT SET First_name='" + fnameText.getText() + "', Last_name='" + lnameText.getText() + "', "+ "User_name ='"+unameText.getText()+"',"+"password ='"+passwordText.getText()+"'"+" WHERE S_id ="+ studentIDList.getSelectedItem());
```

Delete:
```
"DELETE FROM student WHERE S_ID = "+ studentIDList.getSelectedItem());
```

REFERENCES

1.http://sociallearningcommunity.com/10-of-the-best-mooc-providers/
2.https://en.wikipedia.org/wiki/List_of_MOOC_providers
3.https://github.com/sherlahemanth001/DBMS-project.git(assignment 1)