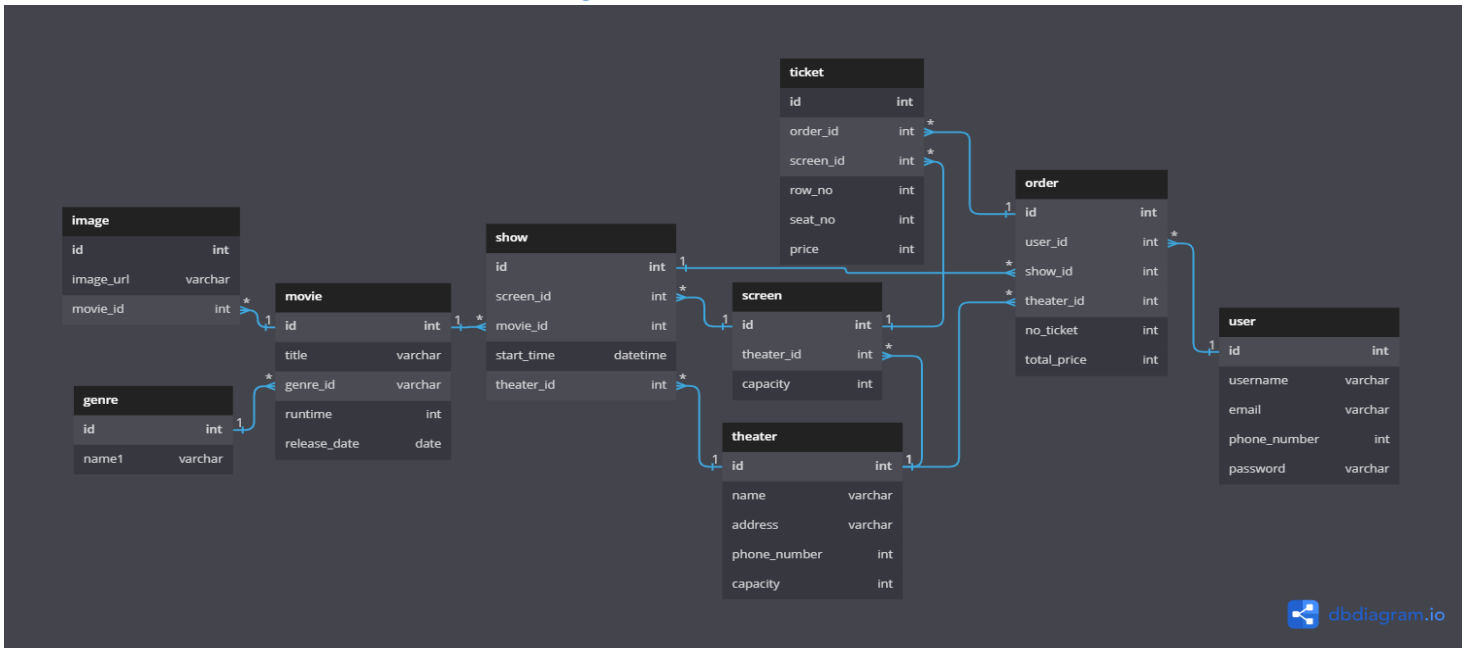


Лабораторын ажил – 8

Embedded SQL – тай ажиллах

1. Сонгон авсан database www.Urgoo.mn



2. Insert Query :

```
src > J DatabaseSystemTask.java > DatabaseSystemTask > main(String[])
1  import java.sql.Connection;
2  import java.sql.DriverManager;
3  import java.sql.PreparedStatement;
4  import java.sql.SQLException;
5  public class DatabaseSystemTask {
6      Run | Debug
7      public static void main(String[] args) throws SQLException{
8          String DB_URL = "jdbc:mysql://localhost:3308/urgoo" ;
9          String USER = "root" ;
10         String PASS = "1" ;
11         int id = 5 ;
12         String username = "jack" ;
13         String email = "jack123@gmail.com" ;
14         int phone_number = 88238485 ;
15         String passwordd = "jack123" ;
16         try {
17             Connection connection = DriverManager.getConnection(DB_URL, USER, PASS) ;
18             String sql = "INSERT INTO users (id, username, email, phone_number, passwordd) + " VALUES (?, ?, ?, ?, ?)" ;
19             PreparedStatement statement = connection.prepareStatement(sql) ;
20             statement.setInt(parameterIndex:1, id);
21             statement.setString(parameterIndex:2, username);
22             statement.setString(parameterIndex:3, email);
23             statement.setInt(parameterIndex:4, phone_number);
24             statement.setString(parameterIndex:5, passwordd);
25             int rows = statement.executeUpdate() ;
26             if (rows > 0){
27                 System.out.println(x:"New user information added successfully");
28             }
29             catch (SQLException ex) {
30                 ex.printStackTrace();
31             }
32         }
33     }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
PS C:\Users\dell\Desktop\embedd> c:; cd 'c:\Users\dell\Desktop\embedd'; & 'C:\Users\dell\AppData\Local\Programs\Eclipse Adoptiu
s\dell\AppData\Local\Temp\cp_1enfa9zhr3prf01rw06fi8b8a.argsfile' 'DatabaseSystemTask'
New user information added successfully
PS C:\Users\dell\Desktop\embedd>
```

Ажиллахын өмнө :

| | id | username | email | phone_number | passwordd |
|---|------|----------|-------|--------------|-----------|
| ▶ | 1 | john | john | 123 | 1234 |
| | 2 | jane | jane | 987 | 4567 |
| | 3 | bob | bob | 555 | 7891 |
| | 4 | ali | ali | 111 | 0123 |
| * | NULL | NULL | NULL | NULL | NULL |

Ажилласны дараа :

| | id | username | email | phone_number | passwordd |
|---|----|----------|-------------------|--------------|-----------|
| ▶ | 1 | john | john | 123 | 1234 |
| | 2 | jane | jane | 987 | 4567 |
| | 3 | bob | bob | 555 | 7891 |
| | 4 | ali | ali | 111 | 0123 |
| | 5 | jack | jack123@gmail.com | 88238485 | jack123 |

3. Update Query :

```
src > J DatabaseSystemTask.java > DatabaseSystemTask > main(String[])
1  import java.sql.Connection;
2  import java.sql.DriverManager;
3  import java.sql.PreparedStatement;
4  import java.sql.SQLException;
5  public class DatabaseSystemTask {
6      public static void main(String[] args) throws SQLException {
7          String DB_URL = "jdbc:mysql://localhost:3308/urgoo" ;
8          String USER = "root" ;
9          String PASS = "t" ;
10         String username = "nick" ;
11         String email = "nick1nick2@yahoo.com" ;
12         int phone_number = 88238485 ;
13         String passwordd = "nick12345678" ;
14         try {
15             Connection connection = DriverManager.getConnection(DB_URL, USER, PASS) ;
16             String sql = "UPDATE users SET username=?, email=?, passwordd=? WHERE phone_number=?" ;
17             PreparedStatement statement = connection.prepareStatement(sql) ;
18             statement.setString(parameterIndex:1, username);
19             statement.setString(parameterIndex:2, email);
20             statement.setString(parameterIndex:3, passwordd);
21             statement.setInt(parameterIndex:4, phone_number);
22             int rows = statement.executeUpdate() ;
23             if (rows > 0){
24                 System.out.println("User information updated successfully");
25             }
26         } catch (SQLException ex) {
27             ex.printStackTrace();
28         }
29     }
30 }
31 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
PS C:\Users\dell\Desktop\embedd> c:; cd 'c:\Users\dell\Desktop\embedd'; & 'C:\Users\dell\AppData\Local\Temp\cp_1enf9zhr3prf0lrw06fi8b8a.argfile' 'DatabaseSystemTask'
User information updated successfully
PS C:\Users\dell\Desktop\embedd>
```

Ажиллахын өмнө :

| | id | username | email | phone_number | passwordd |
|---|----|----------|-------------------|--------------|-----------|
| ▶ | 1 | john | john | 123 | 1234 |
| | 2 | jane | jane | 987 | 4567 |
| | 3 | bob | bob | 555 | 7891 |
| | 4 | ali | ali | 111 | 0123 |
| | 5 | jack | jack123@gmail.com | 88238485 | jack123 |

Ажилласны дараа :

| | id | username | email | phone_number | passwordd |
|---|----|----------|----------------------|--------------|--------------|
| ▶ | 1 | john | john | 123 | 1234 |
| | 2 | jane | jane | 987 | 4567 |
| | 3 | bob | bob | 555 | 7891 |
| | 4 | ali | ali | 111 | 0123 |
| | 5 | nick | nick1nick2@yahoo.com | 88238485 | nick12345678 |

4. Delete Query :

```

1  import java.sql.Connection;
2  import java.sql.DriverManager;
3  import java.sql.PreparedStatement;
4  import java.sql.SQLException;
5  public class DatabaseSystemTask {
6      public static void main(String[] args) throws SQLException {
7          String DB_URL = "jdbc:mysql://localhost:3308/urgoo" ;
8          String USER = "root" ;
9          String PASS = "" ;
10         int id = 5 ;
11         try {
12             Connection connection = DriverManager.getConnection(DB_URL, USER, PASS) ;
13             String sql = "DELETE FROM users where id=? " ;
14             PreparedStatement statement = connection.prepareStatement(sql) ;
15             statement.setInt(1, id);
16             int rows = statement.executeUpdate() ;
17             if (rows > 0){
18                 System.out.println("User information deleted successfully");
19             }
20         }
21         catch (SQLException ex) {
22             ex.printStackTrace();
23         }
24     }
25 }

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```

dk-17.0.7.7-hotspot\bin\java.exe' '@C:\Users\dell\AppData\Local\Temp\cp_1enfa9zhr3prf0lrw06f
User information deleted successfully
PS C:\Users\dell\Desktop\embedd>

```

Ажиллахын өмнө :

| | id | username | email | phone_number | passwordd |
|---|----|----------|----------------------|--------------|--------------|
| ▶ | 1 | john | john | 123 | 1234 |
| | 2 | jane | jane | 987 | 4567 |
| | 3 | bob | bob | 555 | 7891 |
| | 4 | ali | ali | 111 | 0123 |
| | 5 | nick | nick1nick2@yahoo.com | 88238485 | nick12345678 |

Ажилласны дараа :

| | id | username | email | phone_number | passwordd |
|---|------|----------|-------|--------------|-----------|
| ▶ | 1 | john | john | 123 | 1234 |
| | 2 | jane | jane | 987 | 4567 |
| | 3 | bob | bob | 555 | 7891 |
| | 4 | ali | ali | 111 | 0123 |
| ✱ | NULL | NULL | NULL | NULL | NULL |

5. Select Query :

```
src > J DatabaseSystemTask.java > DatabaseSystemTask > main(String[]) <Statement>
1  import java.sql.Connection;
2  import java.sql.DriverManager;
3  import java.sql.ResultSet;
4  import java.sql.ResultSetMetaData;
5  import java.sql.SQLException;
6  public class DatabaseSystemTask {
7      Run | Debug
      public static <Statement> void main(String[] args) throws SQLException{
8          String DB_URL = "jdbc:mysql://localhost:3308/urgoo" ;
9          String USER = "root" ;
10         String PASS = "1" ;
11         try {
12             Connection connection = DriverManager.getConnection(DB_URL, USER, PASS) ;
13             java.sql.Statement statement = connection.createStatement() ;
14             String sql = "SELECT * FROM shows AS s, movie AS m, theater AS t " +
15                 "WHERE t.id = s.theater_id AND s.movie_id = m.id AND t.nameee = 'Theater1'";
16             ResultSet result = statement.executeQuery(sql) ;
17             ResultSetMetaData metaData = result.getMetaData();
18             int numColumn = metaData.getColumnCount();
19             while (result.next()) {
20                 String ResultData = "";
21                 for (int i = 1; i <= numColumn; i++) {
22                     if (i != numColumn)
23                         ResultData += result.getString(i) + ", ";
24                     else
25                         ResultData += result.getString(i);
26                 }
27                 System.out.println(ResultData);
28             }
29         }
30         catch (SQLException ex){
31             ex.printStackTrace();
32         }
33     }

```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL**

```
\Users\dell\AppData\Local\Temp\cp_1enfa9zhr3prf0lrw06fi8b8a.argfile' 'DatabaseSystemTask'
1, 1, 1, 2023-04-20 18:00:00, 1, 1, Godfather, 2, 140, 1979-09-12, 1, Theater1, 12 Main St, 123, 495
2, 2, 1, 2023-04-20 20:30:00, 1, 1, Godfather, 2, 140, 1979-09-12, 1, Theater1, 12 Main St, 123, 495
6, 1, 3, 2023-04-20 15:30:00, 1, 3, Moviee, 3, 143, 1993-12-16, 1, Theater1, 12 Main St, 123, 495

```

Shows хүснэгт:

| | id | screen_id | movie_id | start_time | theater_id |
|---|----|-----------|----------|---------------------|------------|
| ▶ | 1 | 1 | 1 | 2023-04-20 18:00:00 | 1 |
| | 2 | 2 | 1 | 2023-04-20 20:30:00 | 1 |
| | 3 | 1 | 2 | 2023-04-20 19:00:00 | 2 |
| | 4 | 2 | 2 | 2023-04-20 21:30:00 | 2 |
| | 5 | 1 | 3 | 2023-04-20 20:00:00 | 3 |
| | 6 | 1 | 3 | 2023-04-20 15:30:00 | 1 |

Theater хүснэгт:

| | id | nameee | address | phone_number | capacity |
|---|------|----------|------------|--------------|----------|
| ▶ | 1 | Theater1 | 12 Main St | 123 | 495 |
| | 2 | Theater2 | 34 Main St | 234 | 250 |
| | 3 | Theater3 | 56 Main St | 345 | 100 |
| | 4 | Theater4 | 78 Main St | 456 | 180 |
| | 5 | Theater5 | 90 Main St | 567 | 120 |
| | NULL | NULL | NULL | NULL | NULL |

Movie хүснэгт:

| | id | title | genre_id | runtime | release_date |
|---|------|------------|----------|---------|--------------|
| ▶ | 1 | Godfather | 2 | 140 | 1979-09-12 |
| | 2 | Impossible | 4 | 120 | 1995-09-12 |
| | 3 | Moviee | 3 | 143 | 1993-12-16 |
| • | NULL | NULL | NULL | NULL | NULL |

Үр дүн:

| | id | screen_id | movie_id | start_time | theater_id | id | title | genre_id | runtime | release_date | id | namee | address | phone_number | capacity |
|---|----|-----------|----------|---------------------|------------|----|-----------|----------|---------|--------------|----|----------|------------|--------------|----------|
| ▶ | 1 | 1 | 1 | 2023-04-20 18:00:00 | 1 | 1 | Godfather | 2 | 140 | 1979-09-12 | 1 | Theater1 | 12 Main St | 123 | 495 |
| | 2 | 2 | 1 | 2023-04-20 20:30:00 | 1 | 1 | Godfather | 2 | 140 | 1979-09-12 | 1 | Theater1 | 12 Main St | 123 | 495 |
| | 6 | 1 | 3 | 2023-04-20 15:30:00 | 1 | 3 | Moviee | 3 | 143 | 1993-12-16 | 1 | Theater1 | 12 Main St | 123 | 495 |

SELECT * FROM shows AS s, movie AS m, theater AS t

WHERE t.id = s.theater_id AND s.movie_id = m.id AND t.namee = "Theater1";

Энэхүү Select query нь Theater1 гэсэн нэртэй кино театрын үзвэрийн мэдээлэл болон киноны мэдээллийг харуулсан.

Хавсралт:

```
import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.ResultSet;

import java.sql.ResultSetMetaData;

import java.sql.SQLException;

public class DatabaseSystemTask {                                //SELECT

    public static <Statement> void main(String[] args) throws SQLException{

        String DB_URL = "jdbc:mysql://localhost:3308/urgoo" ;

        String USER = "root" ;

        String PASS = "" ;

        try {

            Connection connection = DriverManager.getConnection(DB_URL, USER, PASS) ;

            java.sql.Statement statement = connection.createStatement() ;

            String sql = "SELECT * FROM shows AS s, movie AS m, theater AS t " +

                "WHERE t.id = s.theater_id AND s.movie_id = m.id AND t.namee = 'Theater1'";
```

```

        ResultSet result = statement.executeQuery(sql) ;

        ResultSetMetaData metaData = result.getMetaData();

        int numColumn = metaData.getColumnCount();

        while (result.next()) {

            String ResultData = "";

            for (int i = 1; i <= numColumn; i++) {

                if (i != numColumn)

                    ResultData += result.getString(i) + ", ";

                else

                    ResultData += result.getString(i);

            }

            System.out.println(ResultData);

        }

    }

    catch (SQLException ex){

        ex.printStackTrace();

    }

}

public class DatabaseSystemTask {                                //INSERT

    public static void main(String[] args) throws SQLException{

        String DB_URL = "jdbc:mysql://localhost:3308/urgoo" ;

        String USER = "root" ;

        String PASS = "" ;

        int id = 5 ;

        String username = "jack" ;

        String email = "jack123@gmail.com" ;

        int phone_number = 88238485 ;

        String passwordd = "jack123" ;

```

```

try {
    Connection connection = DriverManager.getConnection(DB_URL, USER, PASS) ;

    String sql = "INSERT INTO users (id, username, email, phone_number, passwordd)" + " VALUES (?, ?, ?, ?, ?)" ;

    PreparedStatement statement = connection.prepareStatement(sql) ;

    statement.setInt(1, id);
    statement.setString(2, username);
    statement.setString(3, email);
    statement.setInt(4, phone_number);
    statement.setString(5, passwordd);

    int rows = statement.executeUpdate() ;

    if (rows > 0){
        System.out.println("New user information added successfully");
    }
}

catch (SQLException ex) {
    ex.printStackTrace();
}

}

public class DatabaseSystemTask {                                     //DELETE

    public static void main(String[] args) throws SQLException{

        String DB_URL = "jdbc:mysql://localhost:3308/urgoo" ;

        String USER = "root" ;

        String PASS = "" ;

        int id = 5 ;

        try {

            Connection connection = DriverManager.getConnection(DB_URL, USER, PASS) ;

            String sql = "DELETE FROM users where id=? ";

```

```

PreparedStatement statement = connection.prepareStatement(sql) ;

statement.setInt(1, id);

int rows = statement.executeUpdate() ;

if (rows > 0){

System.out.println("User information deleted successfully");

}

}

catch (SQLException ex) {

ex.printStackTrace();

}

}

}

public class DatabaseSystemTask {                                     //UPDATE

    public static void main(String[] args) throws SQLException{

String DB_URL = "jdbc:mysql://localhost:3308/urgoo" ;

String USER = "root" ;

String PASS = "" ;

String username = "nick" ;

String email = "nick1nick2@yahoo.com" ;

int phone_number = 88238485 ;

String passwordd = "nick12345678" ;

try {

Connection connection = DriverManager.getConnection(DB_URL, USER, PASS) ;

String sql = "UPDATE users SET username=?, email=?, passwordd=? WHERE phone_number=?" ;

PreparedStatement statement = connection.prepareStatement(sql) ;

statement.setString(1, username);

statement.setString(2, email);

statement.setString(3, passwordd);

statement.setInt(4, phone_number);

```



```
int rows = statement.executeUpdate() ;  
if (rows > 0){  
    System.out.println("User information updated successfully");  
}  
}  
catch (SQLException ex) {  
    ex.printStackTrace();  
}  
}
```