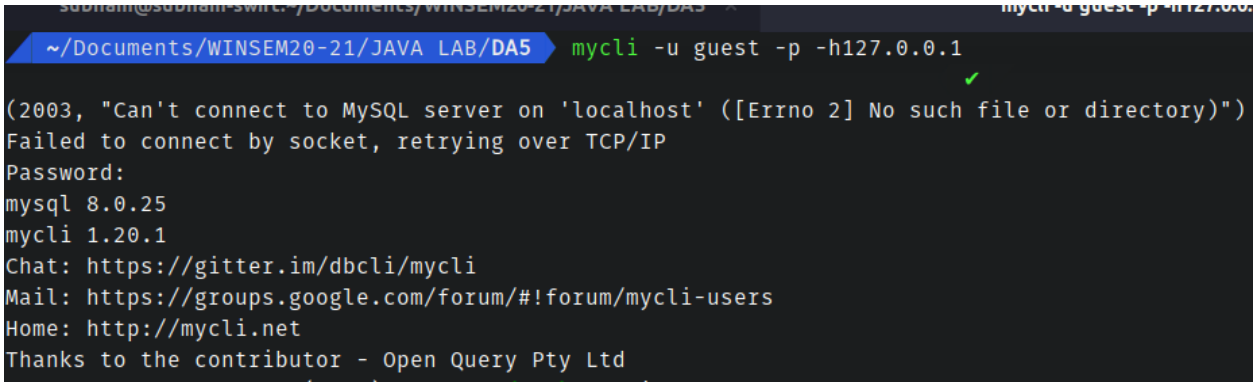
19BIT0093 - Subham Subhasish Panda

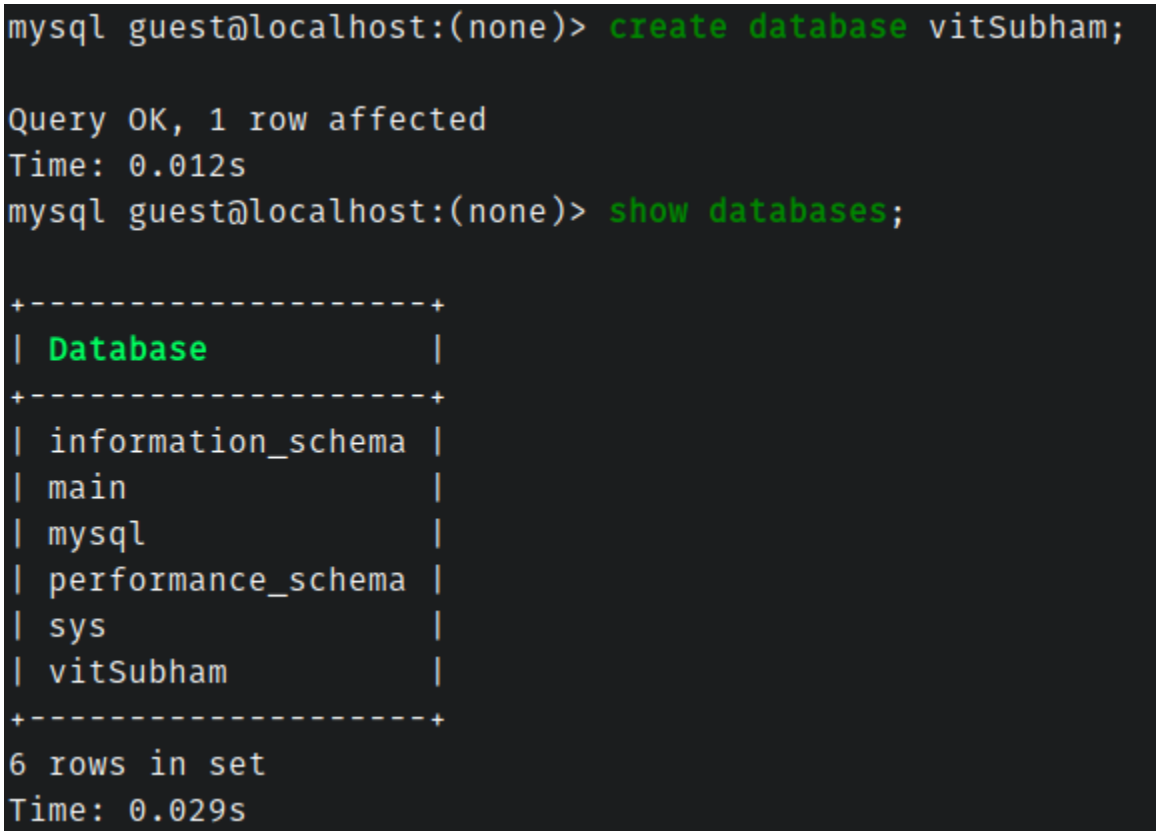
JAVA EXERCISES - JDBC and SQL

1. Basic SQL Commands

Starting MySQL and logging in:



Creating Database:



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Selecting Database:

```
mysql guest@localhost:(none)> use vitSubham;

You are now connected to database "vitSubham" as user "guest"
Time: 0.001s
```

Creating Table:

```
mysql guest@localhost:vitSubham> create table students ( name VARCHAR(20),password VARCHAR(20), country VARCHAR(20
), marks INT );
Query OK, 0 rows affected
Time: 0.067s
mysql guest@localhost:vitSubham> show tables;

+---------------------+
| Tables_in_vitSubham |
+---------------------+
| students            |
+---------------------+
1 row in set
Time: 0.031s
```

Insert Command:

```
mysql guest@localhost:vitSubham> insert into students values ("Subham Panda","password","India",85);

Query OK, 1 row affected
Time: 0.026s
mysql guest@localhost:vitSubham> insert into students values ("Anmol Kumar","australiapassword","Australia",89);

Query OK, 1 row affected
Time: 0.004s
```

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Select query:

```
mysql guest@localhost:vitSubham> select * from students;

+--------------+-------------------+-----------+-------+
| name         | password          | country   | marks |
+--------------+-------------------+-----------+-------+
| Subham Panda | password          | India     | 85    |
| Anmol Kumar  | australiapassword | Australia | 89    |
+--------------+-------------------+-----------+-------+
2 rows in set
Time: 0.028s
mysql guest@localhost:vitSubham> select * from students where country="India";

+--------------+----------+---------+-------+
| name         | password | country | marks |
+--------------+----------+---------+-------+
| Subham Panda | password | India   | 85    |
+--------------+----------+---------+-------+
1 row in set
Time: 0.029s
```

```
mysql guest@localhost:vitSubham> select * from students where marks > 85;

+-------------+-------------------+-----------+-------+
| name        | password          | country   | marks |
+-------------+-------------------+-----------+-------+
| Anmol Kumar | australiapassword | Australia | 89    |
+-------------+-------------------+-----------+-------+
1 row in set
Time: 0.012s
```

Update query:

```
mysql guest@localhost:vitSubham> update students set password="testpass" where name="Anmol Kumar";

Query OK, 1 row affected
Time: 0.007s
```

```
mysql guest@localhost:vitSubham> select password from students where name="Anmol Kumar"

+----------+
| password |
+----------+
| testpass |
+----------+
1 row in set
Time: 0.012s
```

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Delete query:

```
mysql guest@localhost:vitSubham> delete from students where name="Subham Panda"

You're about to run a destructive command.
Do you want to proceed? (y/n): y
Your call!
Query OK, 1 row affected
Time: 0.006s
mysql guest@localhost:vitSubham> select * from students;

+--------------+----------+-----------+-------+
| name         | password | country   | marks |
+--------------+----------+-----------+-------+
| Anmol Kumar | testpass | Australia | 89    |
+--------------+----------+-----------+-------+
1 row in set
Time: 0.027s
```

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2. Connecting to Database

Code:

```
import java.sql.*;

public class p1jdbc {
   public static void main(String[] args) {
       String DB_URL = "jdbc:mysql://localhost:3306/vitSubham";
       String USER = "guest";
       String PASS = "guest123";
       try {
           Connection con = DriverManager.getConnection(DB_URL, USER,
PASS);
           System.out.println("Connection established successfully");
           con.close();
       } catch (SQLException e) {
           System.out.println(e.getMessage());
       }
   }
}
```

Output:

```
~/Documents/WINSEM20-21/JAVA LAB/DA5/JDBC
Connection established successfully
```

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3. Inserting record

Code:

```
// Inserting record
import java.sql.*;

public class p2jdbc {
   public static void main(String[] args) {
       String DB_URL = "jdbc:mysql://localhost:3306/vitSubham";
       String USER = "guest";
       String PASS = "guest123";
       try {
           Connection con = DriverManager.getConnection(DB_URL, USER,
PASS);
           System.out.println("Connection established successfully");
           Statement smt = con.createStatement();
           smt.executeUpdate("insert into students values
('Tommy','test','UK',95);");
           System.out.println("Record inserted successfully");
           smt.close();
           con.close();
       } catch (SQLException e) {
           System.out.println(e.getMessage());
       }
   }
}
```

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Output:

```
~/Documents/WINSEM20-21/JAVA LAB/DA5/JDBC  cd "/home/subham/
ng=UTF-8 @/tmp/cp_4dr11bhptrymayeic800forzp.argfile p2jdbc
Connection established successfully
Record inserted successfully
```

```
mysql guest@localhost:vitSubham> select * from students
+-------------+----------+-----------+-------+
| name        | password | country   | marks |
+-------------+----------+-----------+-------+
| Anmol Kumar | testpass | Australia | 89    |
| Tommy       | test     | UK        | 95    |
+-------------+----------+-----------+-------+
2 rows in set
Time: 0.011s
```

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4. Update operation

Code:

```
// updating record
import java.sql.*;

public class p3jdbc {
   public static void main(String[] args) {
       String DB_URL = "jdbc:mysql://localhost:3306/vitSubham";
       String USER = "guest";
       String PASS = "guest123";
       try {
           Connection con = DriverManager.getConnection(DB_URL, USER,
PASS);
           System.out.println("Connection established successfully");
           Statement smt = con.createStatement();
           smt.executeUpdate("update students set password='testpass1'
where name='Tommy';");
           System.out.println("Record updated successfully");
           smt.close();
           con.close();
       } catch (SQLException e) {
           System.out.println(e.getMessage());
       }
   }
}
```

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Output:

```
~/Documents/WINSEM20-21/JAVA LAB/DA5/JDBC  cd "/home/subham/D
ng=UTF-8 @/tmp/cp_4dr11bhptrymayeic800forzp.argfile p3jdbc
Connection established successfully
Record updated successfully
```

```
mysql guest@localhost:vitSubham> select * from students
+-------------+----------+-----------+-------+
| name        | password | country   | marks |
+-------------+----------+-----------+-------+
| Anmol Kumar | testpass | Australia | 89    |
| Tommy       | testpass1 | UK       | 95    |
+-------------+----------+-----------+-------+
2 rows in set
Time: 0.018s
```

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5. Delete operation

Code:

```
// deleting record
import java.sql.*;

public class p4jdbc {
   public static void main(String[] args) {
       String DB_URL = "jdbc:mysql://localhost:3306/vitSubham";
       String USER = "guest";
       String PASS = "guest123";
       try {
           Connection con = DriverManager.getConnection(DB_URL, USER,
PASS);
           System.out.println("Connection established successfully");
           Statement smt = con.createStatement();
           smt.executeUpdate("delete from students where name='Tommy';");
           System.out.println("Record deleted successfully");
           smt.close();
           con.close();
       } catch (SQLException e) {
           System.out.println(e.getMessage());
       }
   }
}
```

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Output:

```
~/Documents/WINSEM20-21/JAVA LAB/DA5/JDBC  cd "/home/subham/Do
ng=UTF-8 @/tmp/cp_4dr11bhptrymayeic800forzp.argfile p4jdbc
Connection established successfully
Record deleted successfully
```

```
mysql guest@localhost:vitSubham> select * from students
+-------------+----------+-----------+-------+
| name        | password | country   | marks |
+-------------+----------+-----------+-------+
| Anmol Kumar | testpass | Australia | 89    |
+-------------+----------+-----------+-------+
1 row in set
Time: 0.027s
```

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6. Fetching records

Code:

```
// fetching records - selct * from students;
import java.sql.*;

public class p5jdbc {
   public static void main(String[] args) {
       String DB_URL = "jdbc:mysql://localhost:3306/vitSubham";
       String USER = "guest";
       String PASS = "guest123";
       try {
           Connection con = DriverManager.getConnection(DB_URL, USER,
PASS);
           System.out.println("Connection established successfully");
           Statement smt =
con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_UPD
ATABLE);
           ResultSet rs = smt.executeQuery("select * from students;");
           if (rs.next() == false) {
               System.out.println("The table is empty");
           } else {
               rs.previous();
               while (rs.next()) {
                   System.out.println("Name: "+rs.getString(1)+",
Password: "+rs.getString(2)+", Country: "+rs.getString(3)+", Marks:
"+rs.getInt(4));
               }
           }
           smt.close();
           con.close();
       } catch (SQLException e) {
           System.out.println(e.getMessage());
       }
   }
}
```

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Output:

```
~/Documents/WINSEM20-21/JAVA LAB/DA5/JDBC  cd "/home/subham/Documents
ng=UTF-8 @/tmp/cp_4dr11bhptrymayeic800forzp.argfile p5jdbc
Connection established successfully
Name: Anmol Kumar, Password: testpass, Country: Australia, Marks: 89
Name: Subham Panda, Password: password, Country: India, Marks: 85
Name: Tommy, Password: test, Country: UK, Marks: 95
```

```
mysql guest@localhost:vitSubham> select * from students
+--------------+----------+-----------+-------+
| name         | password | country   | marks |
+--------------+----------+-----------+-------+
| Anmol Kumar  | testpass | Australia | 89    |
| Subham Panda | password | India     | 85    |
| Tommy        | test     | UK        | 95    |
+--------------+----------+-----------+-------+
3 rows in set
Time: 0.025s
```

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6. Fetching records - using where clause

Code:

```
// fetching records - selct * from students where name='Subham Panda';
import java.sql.*;

public class p6jdbc {
   public static void main(String[] args) {
       String DB_URL = "jdbc:mysql://localhost:3306/vitSubham";
       String USER = "guest";
       String PASS = "guest123";
       try {
           Connection con = DriverManager.getConnection(DB_URL, USER,
PASS);
           System.out.println("Connection established successfully");
           Statement smt =
con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_UPD
ATABLE);
           ResultSet rs = smt.executeQuery("select * from students where
name = 'Subham Panda';");
           if (rs.next() == false) {
               System.out.println("No such record found in database");
           } else {
               rs.previous();
               while (rs.next()) {
                   System.out.println("Name: "+rs.getString(1)+",
Password: "+rs.getString(2)+", Country: "+rs.getString(3)+", Marks:
"+rs.getInt(4));
               }
           }
           smt.close();
           con.close();
       } catch (SQLException e) {
           System.out.println(e.getMessage());
       }
   }
}
```

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Output:

```
~/Documents/WINSEM20-21/JAVA LAB/DA5/JDBC  cd "/home/subham/Documer
ng=UTF-8 @/tmp/cp_4dr11bhptrymayeic800forzp.argfile p6jdbc
Connection established successfully
Name: Subham Panda, Password: password, Country: India, Marks: 85
```

```
mysql guest@localhost:vitSubham> select * from students where name = 'Subham Panda'
+--------------+----------+---------+-------+
| name         | password | country | marks |
+--------------+----------+---------+-------+
| Subham Panda | password | India   | 85    |
+--------------+----------+---------+-------+
1 row in set
Time: 0.028s
```

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7. Get details of student from user and insert record

Code:

```
// Getting details of student from user and Inserting record
import java.sql.*;
import java.util.Scanner;

public class p7jdbc {
   public static void main(String[] args) {
       String DB_URL = "jdbc:mysql://localhost:3306/vitSubham";
       String USER = "guest";
       String PASS = "guest123";
       try {
           Connection con = DriverManager.getConnection(DB_URL, USER,
PASS);
           System.out.println("Connection established successfully");
           Scanner sc = new Scanner(System.in);
           System.out.print("Enter name of student: ");
           String name = sc.nextLine();
           System.out.print("Enter password: ");
           String password = sc.nextLine();
           System.out.print("Enter country name: ");
           String country = sc.nextLine();
           System.out.print("Enter marks: ");
           int marks = sc.nextInt();
           String sql = "insert into students values (?,?,?,?);";
           PreparedStatement smt = con.prepareStatement(sql);
           smt.setString(1, name);
           smt.setString(2, password);
           smt.setString(3, country);
           smt.setInt(4, marks);
           smt.execute();
           System.out.println("Record inserted successfully");
           smt.close();
           con.close();
       } catch (SQLException e) {
           System.out.println(e.getMessage());
       }
   }
}
```

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Output:

```
~/Documents/WINSEM20-21/JAVA LAB/DA5/JDBC  cd "/home/subham/Document
ng=UTF-8 @/tmp/cp_4dr11bhptrymayeic800forzp.argfile p7jdbc
Connection established successfully
Enter name of student: Saurav
Enter password: sauravpass
Enter country name: Canada
Enter marks: 95
Record inserted successfully
```

```
mysql guest@localhost:vitSubham> select * from students
+--------------+------------+-----------+-------+
| name         | password   | country   | marks |
+--------------+------------+-----------+-------+
| Anmol Kumar  | testpass   | Australia | 89    |
| Subham Panda | password   | India     | 85    |
| Tommy        | test       | UK        | 95    |
| Saurav       | sauravpass | Canada    | 95    |
+--------------+------------+-----------+-------+
4 rows in set
Time: 0.031s
```