Task_1- Explanation

1. Importing JDBC classes

Your program first imports the necessary Java classes that are required for database work, such as Connection, DriverManager, PreparedStatement, ResultSet, and SQLException.

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2. Starting the program

The main() method begins. Everything that runs in your program is written inside this method.

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3. Beginning the try block

A try block is used because database operations can throw errors.
If something goes wrong, the catch blocks will handle it.

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4. Loading the Oracle JDBC driver

You specify the name of the Oracle driver class and tell Java to load it.
This step ensures that the Oracle driver becomes available for connecting to the database.

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5. Setting up database details

- The database URL (location of Oracle database)
- The username
- The password
- The table name you want to access
- And finally, the SQL query you want to run (selecting all rows from that table)
- These details tell Java **where to connect** and **what to fetch**.

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6. Establishing the database connection

Java uses the DriverManager class to connect to the Oracle database using your URL, username, and password.
If the login is correct and the database is running, the connection will be successful.

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7. Preparing the SQL statement

After establishing the connection, Java creates a PreparedStatement using your SQL query.
This allows the program to send the SQL command to the database.

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8. Executing the query

The program sends the query to the database and receives the result in a ResultSet, which temporarily stores the returned data.

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9. Checking if the table has at least one row

The program checks whether the ResultSet has any data:

- If at least one record exists → it prints “connection successful”.
- If the table is empty → it prints “connection failed”.

This message is only based on whether rows exist, not on actual connection failure.

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10. Closing the connection

After finishing the work, the program closes the database connection.
Closing connections is important because it frees up resources.

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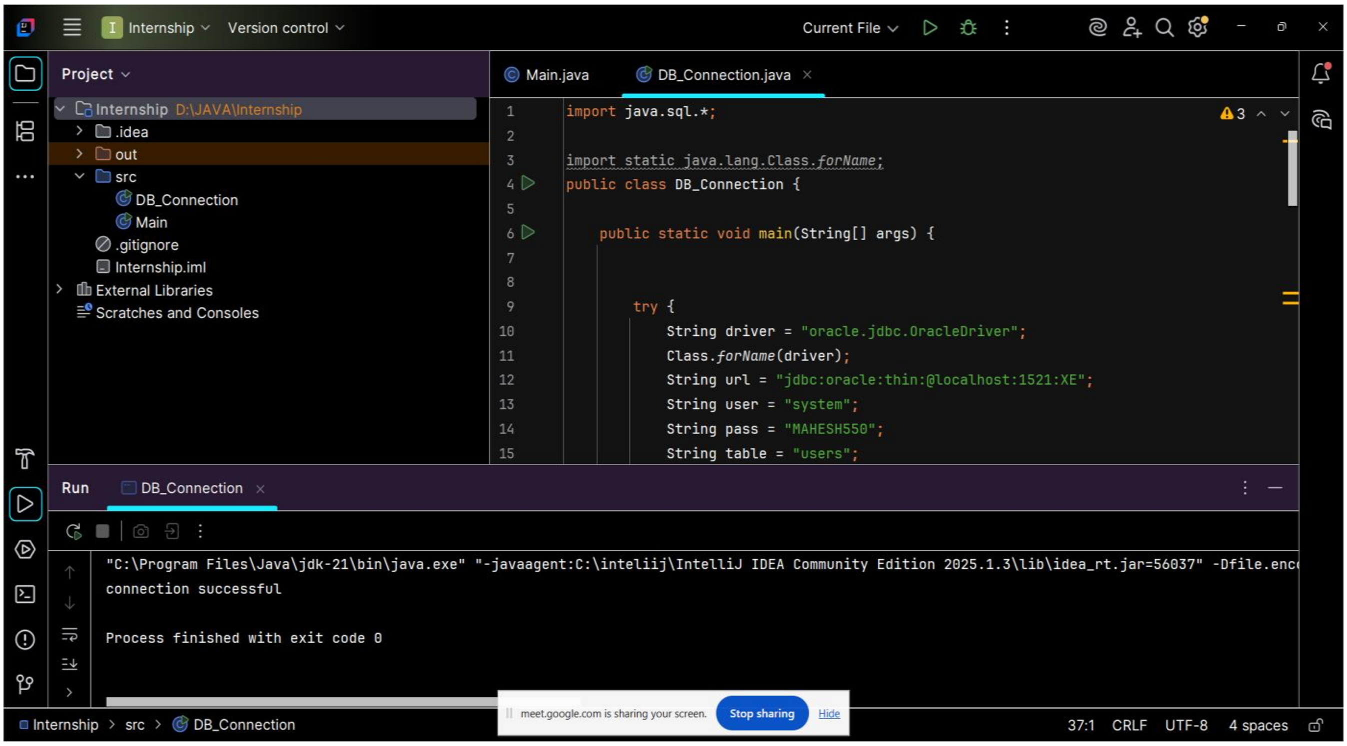
11. Handling errors

Two types of errors are handled:

- **ClassNotFoundException:** Happens if the JDBC driver is not found.
- **SQLException:** Happens if something goes wrong while connecting or querying the database.

Appropriate error messages are printed so you know what went wrong.



```java
import java.sql.*;

import static java.lang.Class.forName;
public class DB_Connection {

    public static void main(String[] args) {


        try {
            String driver = "oracle.jdbc.OracleDriver";
            Class.forName(driver);
            String url = "jdbc:oracle:thin:@localhost:1521:XE";
            String user = "system";
            String pass = "MAHESH550";
            String table = "users";
```

```
"C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\inteliij\IntelliJ IDEA Community Edition 2025.1.3\lib\idea_rt.jar=56037" -Dfile.enc
connection successful

Process finished with exit code 0
```