

ISE 305 DATABASE SYSTEMS

JDBC Examples

1. ECLIPSE BASICS

- First of all, install the latest JDK (Java Development Kit) from *java.sun.com*

In fact, this will be sufficient for using CLI (Command Line Interface), but using an IDE (Integrated Development Environment) will ease the life for us. An IDE mainly includes editing, compiling, building, debugging tools and other time-saving utilities. We will be using Eclipse but there are many other IDEs for Java such as JBuilder, NetBeans, SunONE Studio, WebGain Visual Cafe, etc.

By the way, remember that,

JDK includes {javac + JRE}
JDK includes {JVM + Java API}
and JVM is Java Virtual Machine

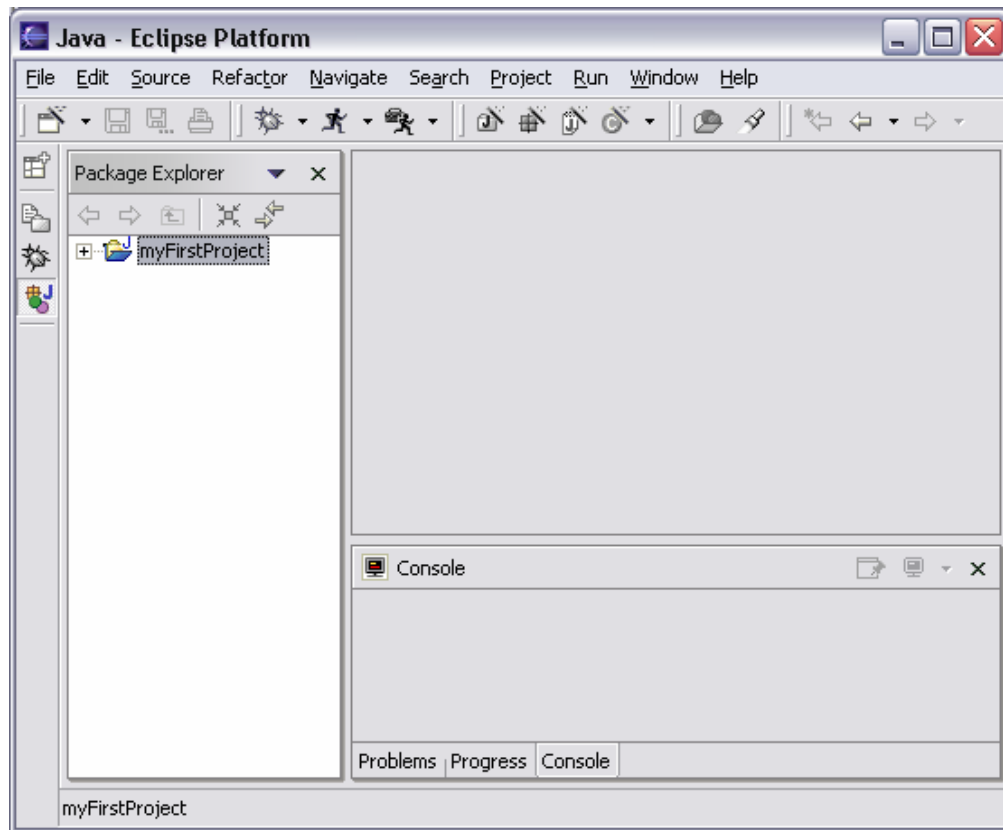
- Download Eclipse SDK (Software Development Kit) from www.eclipse.org

Eclipse is an open source project (of the community with the same name) which is supported by industry leaders such as IBM.

- Create a new project in Eclipse IDE and name it *myFirstProject*

File -> New -> Project -> Java – Java Project -> *myFirstProject*

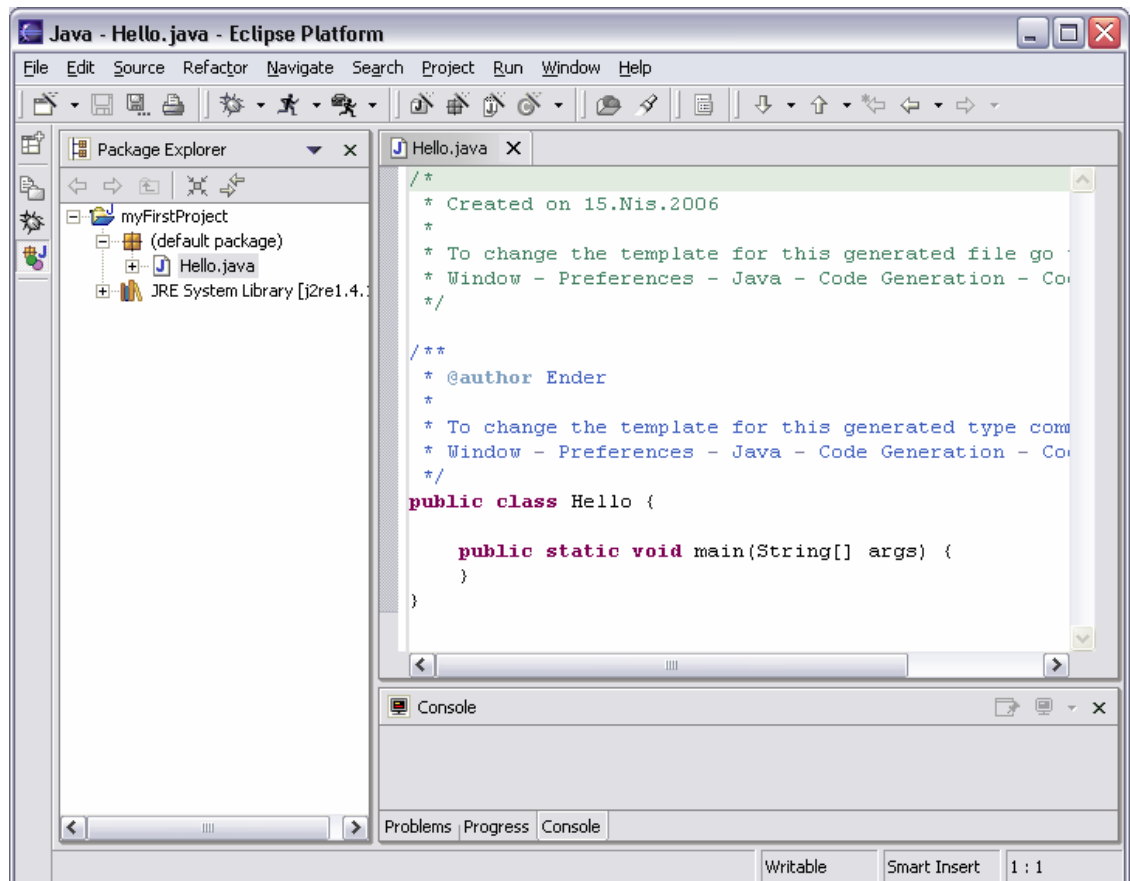
In the *Package Explorer* you will see your project just like this:



- Create a new class in your project and name it *Hello*

File -> New -> Class -> *Hello*

In the *Java Perspective* you will see your class just like this:

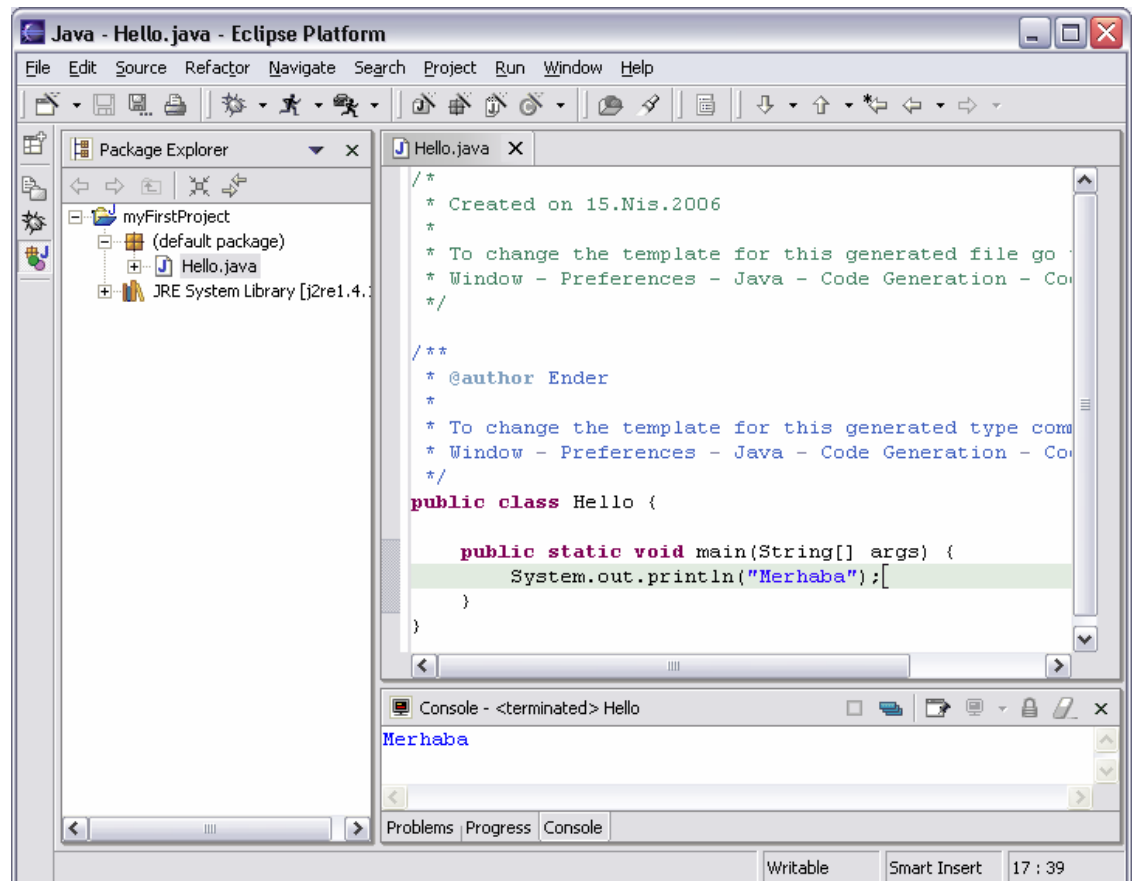


- Write these code in the main : `System.out.println("Merhaba");`

Eclipse checks your code while you're coding, therefore any mistake of yours will be realized before you try to run.

- When ready, run your code by: Run->Run as->Java Application

You will see the output in the Console part of Eclipse:



2. JDBC USAGE

- First of all, download the JDBC driver of your database. Databases have specific JDBC drivers and those drivers are available via the web sites of the database companies/communities. For example, JDBC driver for MySQL (which is named as mysql-java-connector) is available on : www.mysql.com
- Before creating a project using JDBC, we have to add the JDBC driver to the class path by:

Project->Properties->Java Build Path->Libraries->Add External Jars -> *mysql-connector-java-...*

Note: It's wiser to copy the jar file into the Project folder and then add as external jar file.

- Here comes a basic program, first run as is and then uncomment the green part and run again:

```
import java.sql.*;

public class Connect
{
    public static void main (String[] args)
    {
        Connection conn = null;

        try
        {
            // baglanti
            String userName = "root";
            String password = "your_password";
            String url = "jdbc:mysql://localhost/movies";
            Class.forName ("com.mysql.jdbc.Driver").newInstance ();
            conn = DriverManager.getConnection (url, userName,
            password);
            System.out.println ("Database connection established");
        }
        catch (Exception e)
        {
            System.err.println ("Cannot connect to database server");
        }
        /*
        try{

            // select
            Statement s = conn.createStatement ();
            s.executeQuery ("SELECT id, title, year FROM movie");
            ResultSet rs = s.getResultSet ();
            int count = 0;
            while (rs.next ())
            {
                int idVal = rs.getInt ("id");
                String titleVal = rs.getString ("title");
            }
        }
        */
    }
}
```

```

        String yearVal = rs.getString ("year");
        System.out.println (
            "id = " + idVal
            + ", name = " + titleVal
            + ", category = " + yearVal);
        ++count;
    }
    rs.close ();
    s.close ();
    System.out.println (count + " rows were retrieved");
}
catch(Exception e2){
    System.err.println ("Error message: " + e2.getMessage ());
}
*/
finally
{
    if (conn != null)
    {
        try
        {
            conn.close ();
            System.out.println ("Database connection
terminated");
        }
        catch (Exception e) { /* ignore close errors */ }
    }
}
}
}

```

- You can find the other codes in the PS Web Page
- Remember to start your database server (i.e. WampServer) and loading movies database before running these programs