Advanced Java Lab

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By

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(78383)

Semester- 1

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CERTIFICATE

This to certify that, **Vishwakarma Dheeraj Kumar Jaynath** appearing **Master in Computer Application (Semester I) 78383** has satisfactory completed the prescribed practical of **MCAL12-Advanced Java Lab** as laid down by the University of Mumbai for theacademic year 2023-24

Teacher in charge

Examiners

Coordinator
IDOL, MCA
University of Mumbai

Date:

Place:

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Practical No: 1

Aim: Write a Java Program to demonstrate a Generic Class and Generic Methods.

Objective: To create a Java Program that illustrates the use of Generic Classes and Generic Methods.

Description: we will implement a generic class and generic methods to demonstrate the power of generics in Java. The generic class will be designed to handle various types of data, ensuring type safety at compile-time. Additionally, generic methods within the programwill showcase how methods can be written to operate on a variety of data types without sacrificing code clarity or safety. Through this demonstration, we aim to emphasize the benefits of code reusability and flexibility provided by generics in Java.

Program:

```
public class GenericDemo {
    static class GenericBox<T> {
        private T value;
        public GenericBox(T value) {
            this.value = value;
        }
        public T getValue() {
            return value;
        }
    }
    static <T> boolean areEqual(T element1, T element2) {
        return element1.equals(element2);
    }

    public static void main(String[] args) {
        GenericBox<Integer> integerBox = new GenericBox<>(10);
        GenericBox<String>  stringBox  =  new  GenericBox<>("Hello");

        System.out.println("Integer Box Value: " + integerBox.getValue());System.out.println("String
        Box Value: " + stringBox.getValue());
        Integer number1 = 5;
        Integer number2 = 5;
        String word1 = "Hello";
        String word2 = "World";

        System.out.println("Are numbers equal? " + areEqual(number1, number2));
        System.out.println("Are words equal? " + areEqual(word1, word2));
    }
}
```

```
dj@dheeraj MINGW64 ~/Desktop/mca-practical/java-practical (main)
$ javac GenericDemo.java

dj@dheeraj MINGW64 ~/Desktop/mca-practical/java-practical (main)
$ java GenericDemo
Integer Box Value: 10
String Box Value: Hello
Are numbers equal? true
Are words equal? false
```

Conclusion:

Practical No: 2

Aim: Write a Java program to create List containing list of items and use ListIterator interface to print items present in the list. Also print the list in reverse/backward direction.

Objective: Develop a Java program to create a List containing items and utilize the ListIterator interfaceto print the items both in the forward and reverse directions.

Description: This Java program involves the creation of a List, populating it with items, and utilizing the ListIterator interface to traverse and print the items in both forward and backward directions. The ListIterator facilitates sequential access to the elements in the List, enabling efficient navigation and printing.

Program:

```
import java.util.ArrayList;
import java.util.List;
import java.util.ListIterator;

public class ListIteratorExample {
   public static void main(String[] args) {
      List<String> itemList = new ArrayList<>();
      itemList.add("Item1");
      itemList.add("Item2");
      itemList.add("Item3");

      System.out.println("Printing items in forward direction:");
      ListIterator<String> forwardIterator = itemList.listIterator();
      while (forwardIterator.hasNext()) {
         System.out.println(forwardIterator.next());
      }

      System.out.println("\nPrinting items in backward direction:");
      ListIterator<String> backwardIterator = itemList.listIterator(itemList.size());
      while (backwardIterator.hasPrevious()) {
         System.out.println(backwardIterator.previous());
      }
   }
}
```

```
dj@dheeraj MINGW64 ~/Desktop/mca-practical/java-practical (main)
$ javac ListIteratorExample.java

dj@dheeraj MINGW64 ~/Desktop/mca-practical/java-practical (main)
$ java ListIteratorExample
Printing items in forward direction:
Item1
Item2
Item3

Printing items in backward direction:
Item3
Item2
Item1
```

Conclusion:

Practical No: 3

Aim: Write a Java program using Lambda Expression to calculate the following: a. Convert Fahrenheit to Celsius b. Convert Kilometers to Miles.

Objective: Create a Java program using Lambda Expressions to perform temperature conversion fromFahrenheit to Celsius and distance conversion from kilometers to miles.

Description: This Java program utilizes Lambda Expressions to implement functions for converting Fahrenheit to Celsius and kilometers to miles. The concise syntax of Lambda Expressionsenhances code readability and conciseness, making it an efficient approach for such calculations.

Program:

```
import java.util.Scanner;
interface Converter {
   double convert(double input);
}

public class ConversionLambda {
   public static void main(String[] args) {
      Scanner scanner = new Scanner(System.in);
      Converter fahrenheitToCelsius = (fahrenheit) -> (fahrenheit - 32.0) * 5.0 / 9.0;
      Converter kilometersToMiles = (kilometers) -> kilometers * 0.621371;

      System.out.print("Enter temperature in Fahrenheit: ");
      double fahrenheit = scanner.nextDouble();
      double celsius = fahrenheitToCelsius.convert(fahrenheit);
      System.out.println(fahrenheit + " Fahrenheit is equal to " + celsius + " Celsius");

      System.out.print("\nEnter distance in Kilometers: ");
      double kilometers = scanner.nextDouble();
      double miles = kilometersToMiles.convert(kilometers);
      System.out.println(kilometers + " Kilometers is equal to " + miles + " Miles");

      scanner.close();
   }
```

```
dj@dheeraj MINGW64 ~/Desktop/mca-practical/java-practical (main)
$ javac ConversionLambda.java

dj@dheeraj MINGW64 ~/Desktop/mca-practical/java-practical (main)
$ java ConversionLambda
Enter temperature in Fahrenheit: 25
25.0 Fahrenheit is equal to -3.888888888888889 Celsius

Enter distance in Kilometers: 65
65.0 Kilometers is equal to 40.389115000000004 Miles
```

Conclusion:

Practical No: 4

Aim: Write a java program using Map interface containing list of items having keys and associated values and perform the following operations:

A. Add items in the map
B. Remove items from the map.

Objective: Create a Java program utilizing the Map interface to manage a collection of items with keys & associated values, performing operations to add items to the map and remove items fromit.

Description: This Java program leverages the Map interface to handle a collection of items where each item is associated with a unique key. The program includes functionality to add items to the map and remove items from it, demonstrating the versatility of the Map interface in managing key-value pairs.

```
dj@dheeraj MINGW64 ~/Desktop/mca-practical/java-practical (main)
$ javac MapOperations.java

dj@dheeraj MINGW64 ~/Desktop/mca-practical/java-practical (main)
$ java MapOperations
Added: Item1 - 10
Added: Item2 - 20
Added: Item3 - 30
Initial Map: {Item1=10, Item2=20, Item3=30}
Removed: Item2 - 20
Map after removing 'Item2': {Item1=10, Item3=30}
```

Program:

```
import java.util.HashMap;
import java.util.Map;
import java.util.Scanner;

public class MapOperations {
    public static void main(String[] args) {
        Map<String, Integer> itemMap = new HashMap<>();

        addItemToMap(itemMap, "Item1", 10);
        addItemToMap(itemMap, "Item2", 20);
        addItemToMap(itemMap, "Item3", 30);
        System.out.println("Initial Map: " + itemMap);
        removeItemFromMap(itemMap, "Item2");
        System.out.println("Map after removing 'Item2': " + itemMap);
    }

    private static void addItemToMap(Map<String, Integer> map, String key, int value) {
        map.put(key, value);
        System.out.println("Added: " + key + " - " + value);
    }

    private static void removeItemFromMap(Map<String, Integer> map, String key) {
        if (map.containsKey(key)) {
            int removedValue = map.remove(key);
            System.out.println("Removed: " + key + " - " + removedValue);
        } else {
            System.out.println("Item '" + key + "' not found in the map.");
        }
    }
}
```

Conclusion:

Practical No: 5

Aim: Write a JSP page to display the Registration form (Make your own assumptions).

Objective: Develop a JSP (Java Server Pages) page to display a registration form.

Description: This JSP page is designed to present a user-friendly registration form, incorporating HTML and JSP tags to create an interactive and visually appealing interface. The form may include fields for user details such as name, email, password, and other relevant information, allowing users to submit their registration information.

Program:

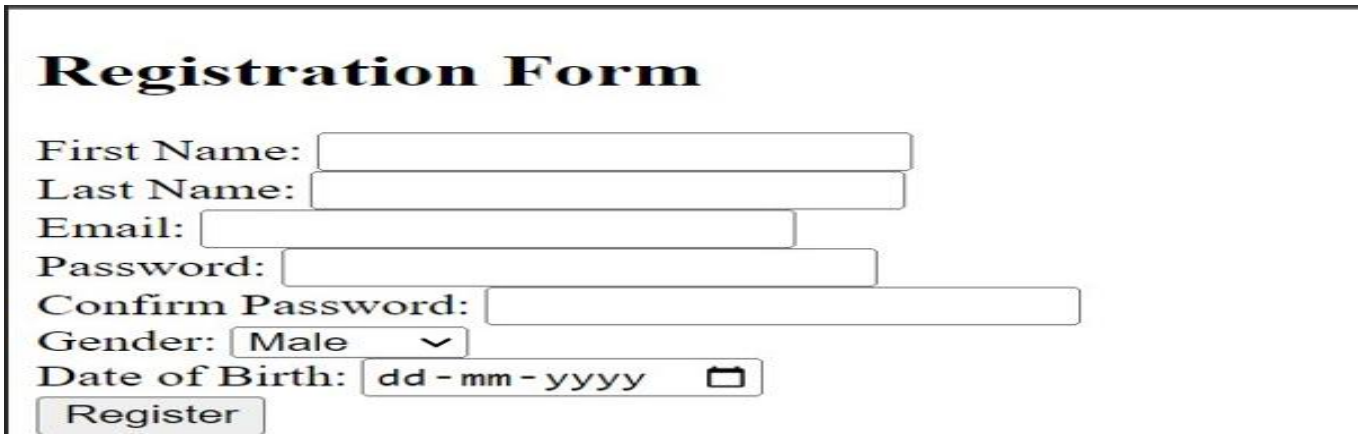
WebApplication1 - NetBeans IDE 8.0.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

Start Page | index.html

Source | History

```html
<!DOCTYPE html>
<html>
<head>
    <meta charset="UTF-8">
    <title>Registration Form</title>
</head>
<body>
    <h2>Registration Form</h2>
    <form action="registration_process.jsp" method="post">
        <label for="firstName">First Name:</label>
        <input type="text" id="firstName" name="firstName" required><br>

        <label for="lastName">Last Name:</label>
        <input type="text" id="lastName" name="lastName" required><br>

        <label for="email">Email:</label>
        <input type="email" id="email" name="email" required><br>

        <label for="password">Password:</label>
        <input type="password" id="password" name="password" required><br>

        <label for="confirmPassword">Confirm Password:</label>
        <input type="password" id="confirmPassword" name="confirmPassword" required><br>

        <label for="gender">Gender:</label>
        <select id="gender" name="gender">
            <option value="male">Male</option>
            <option value="female">Female</option>
            <option value="other">Other</option>
        </select><br>

        <label for="birthdate">Date of Birth:</label>
        <input type="date" id="birthdate" name="birthdate" required><br>

        <input type="submit" value="Register">
    </form>
</body>
</html>
```



Conclusion:

Practical No: 6

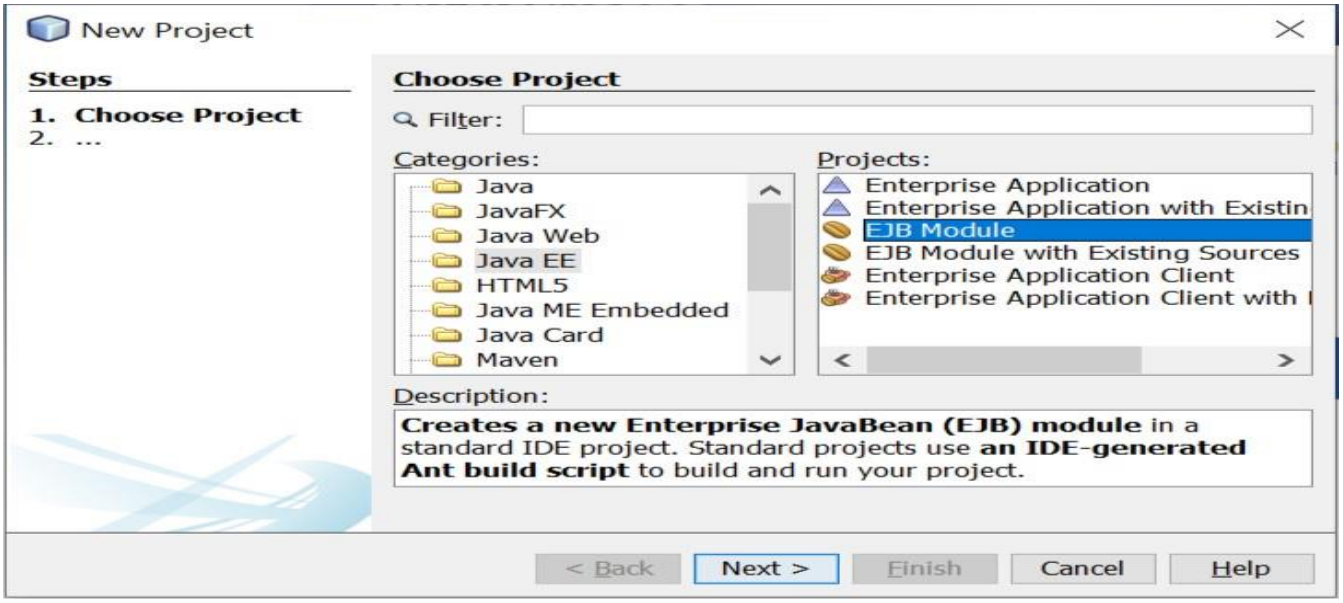
Aim: Create a EJB class to accept name, address and email of a user and to display it.

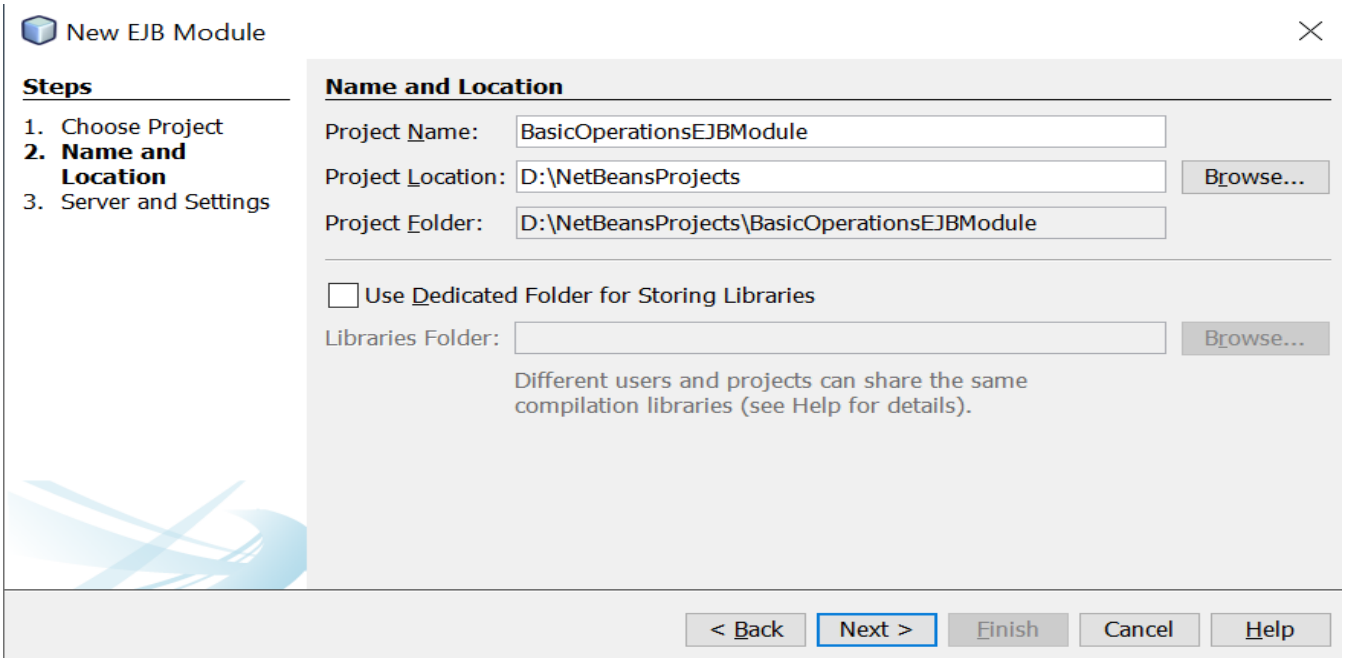
Objective: Develop an Enterprise JavaBeans (EJB) class to receive and store user information, includingname, address, and email, and implement a method to display the stored information.

Description: This EJB class is designed to encapsulate user information by accepting inputs for name, address, and email. It includes methods to store this information and retrieve it for display. The EJB architecture facilitates the creation of scalable and reusable components for managing user data within enterprise applications.

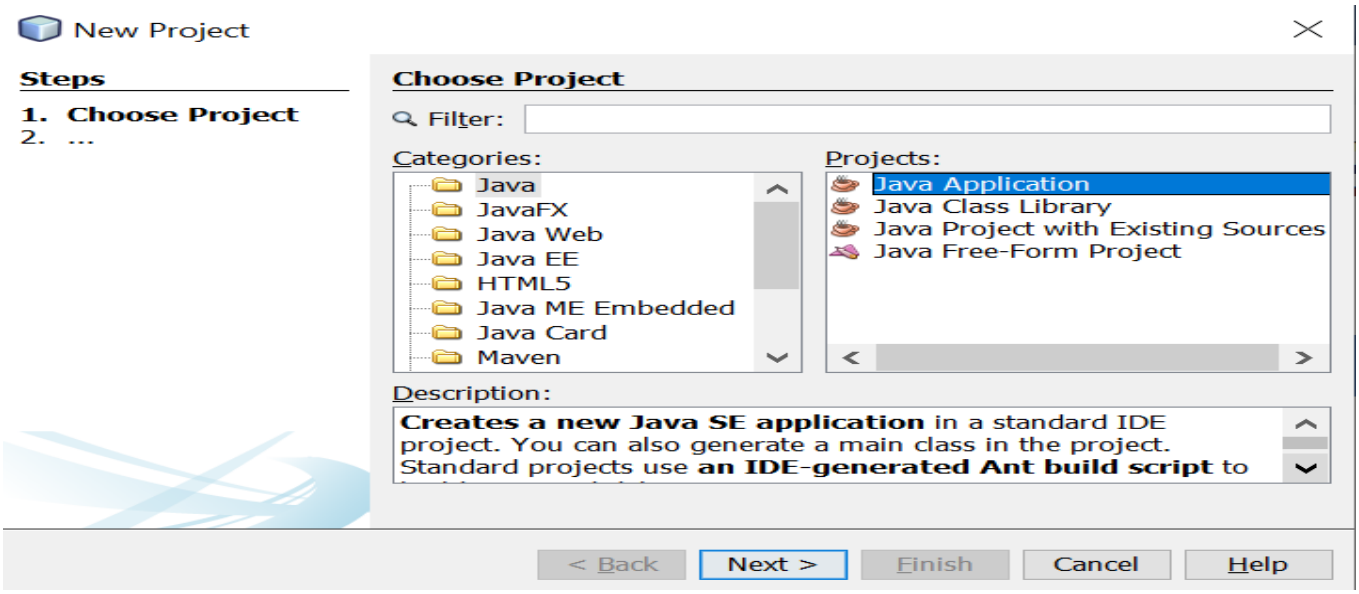
Program:

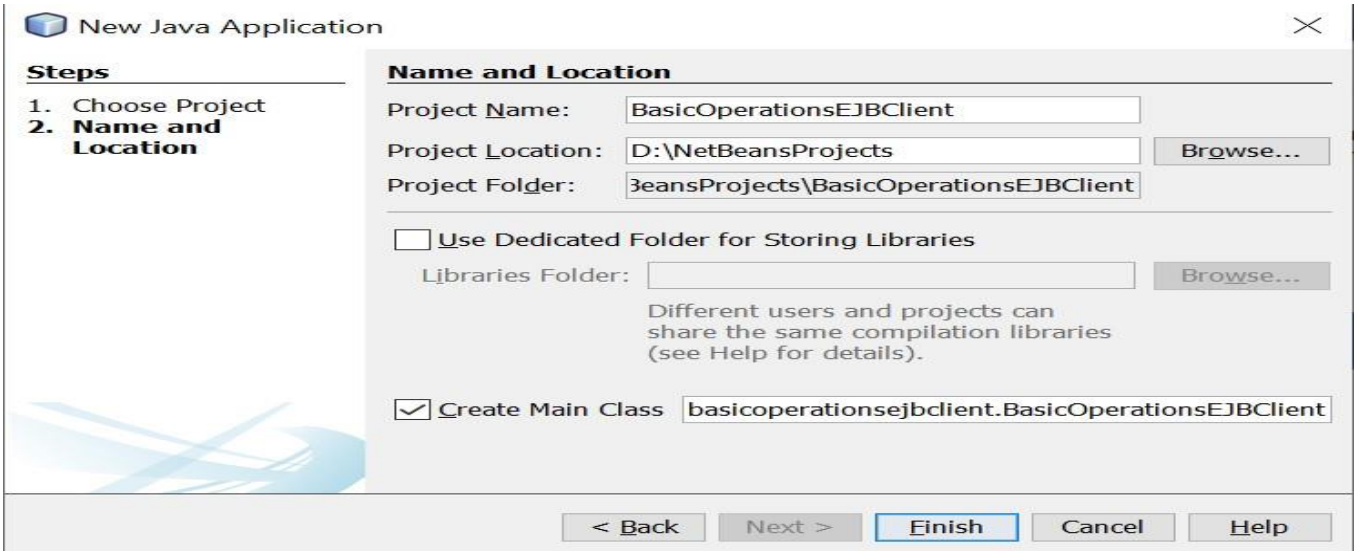
1. Create EJB Module.



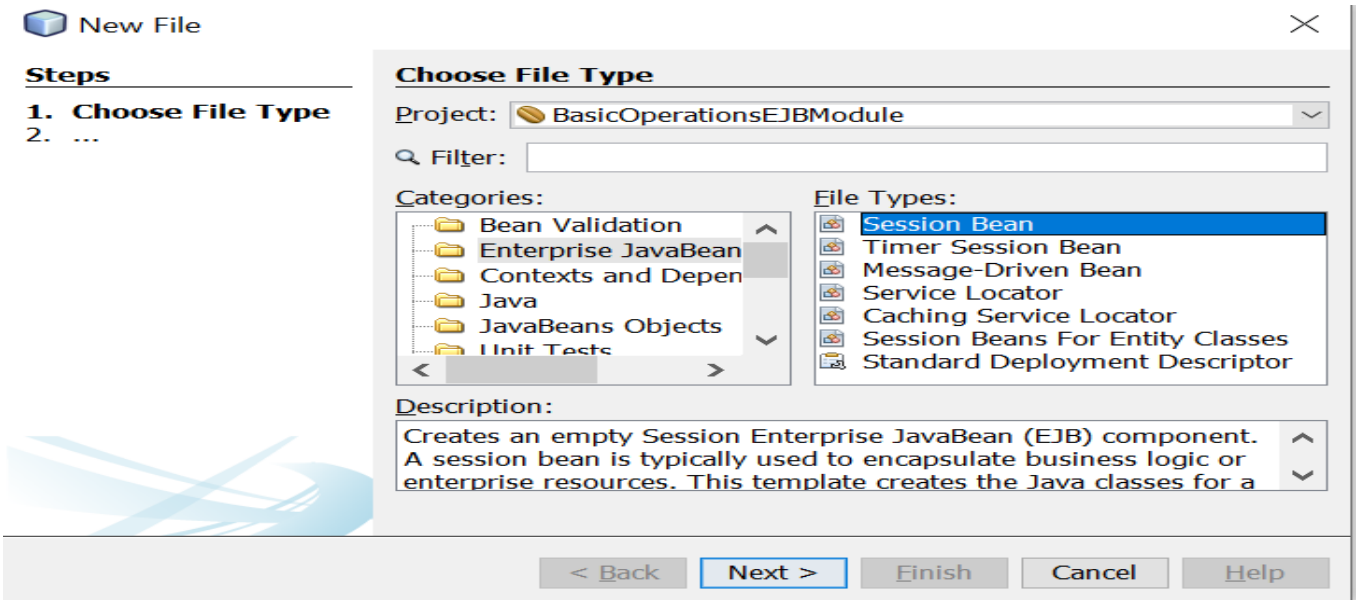


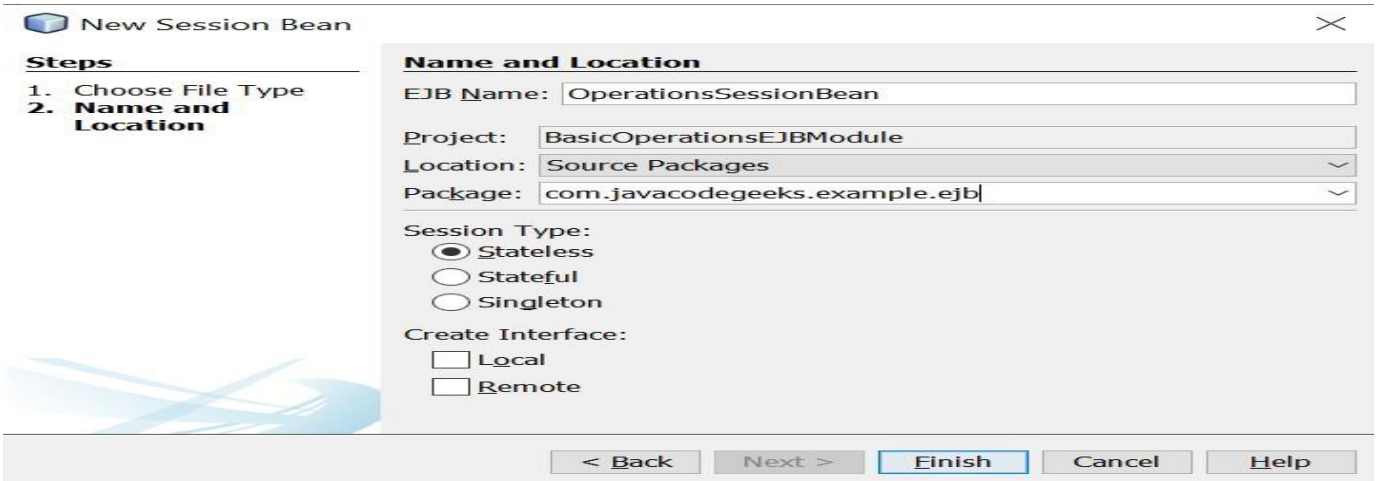
2. Create Java Application.



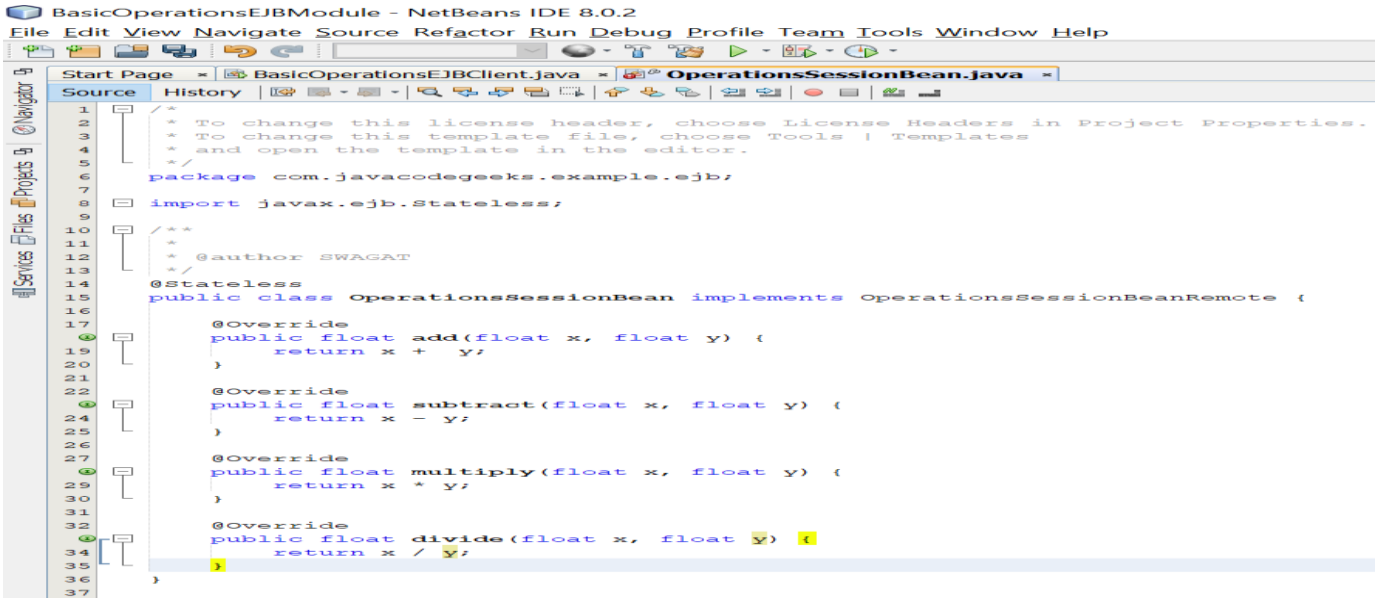


3. Create Session Bean.



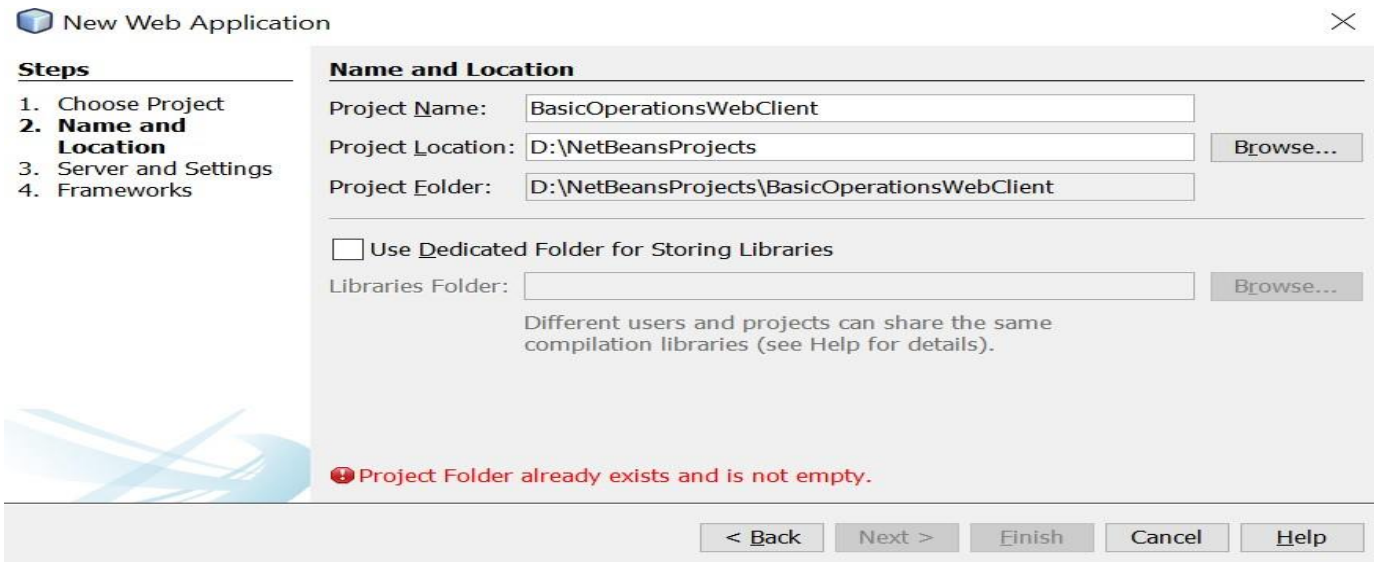


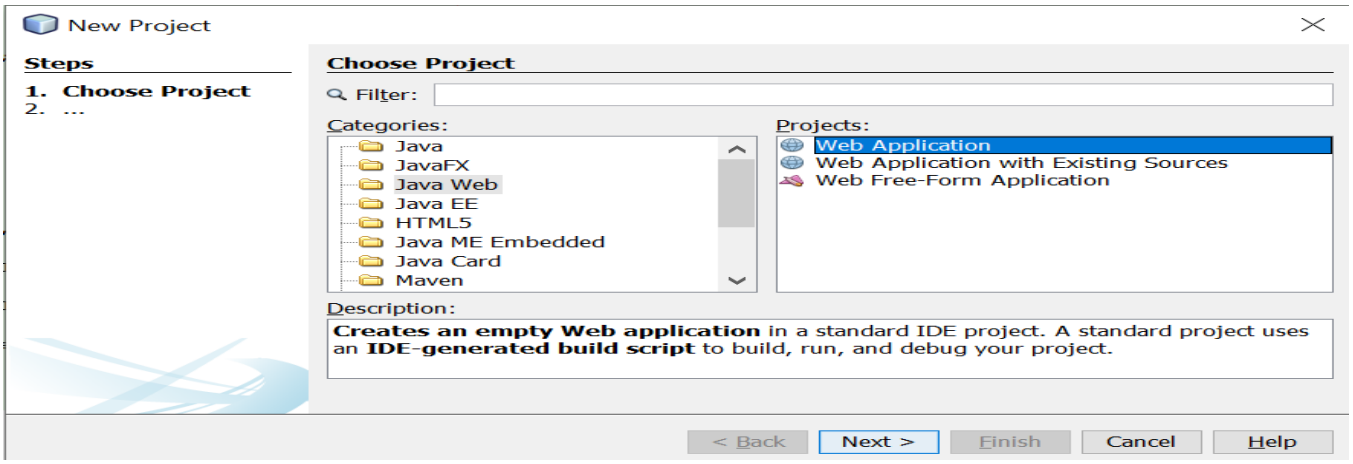
4. Add Methods.



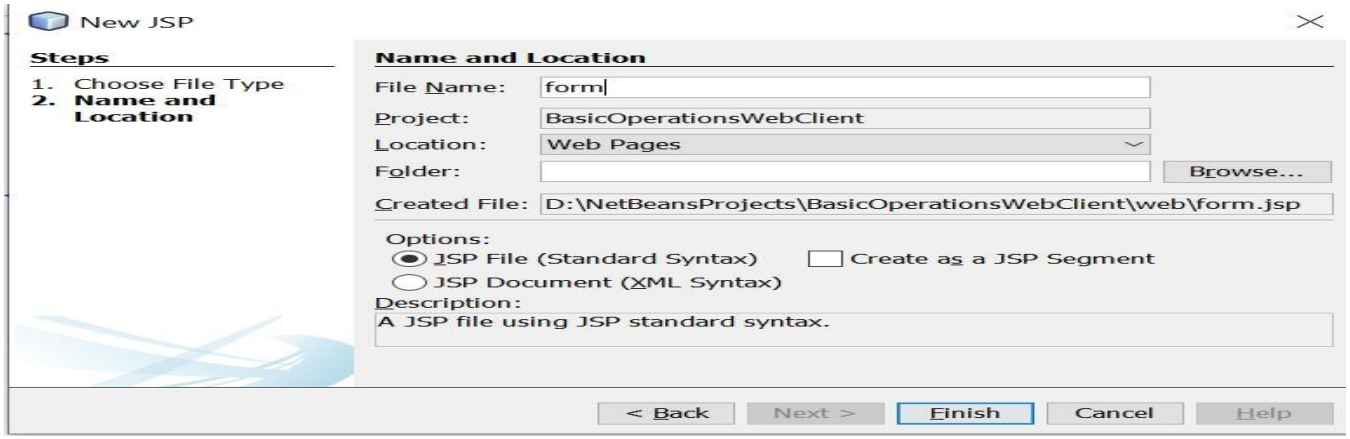
5. Deploy EJB Module.

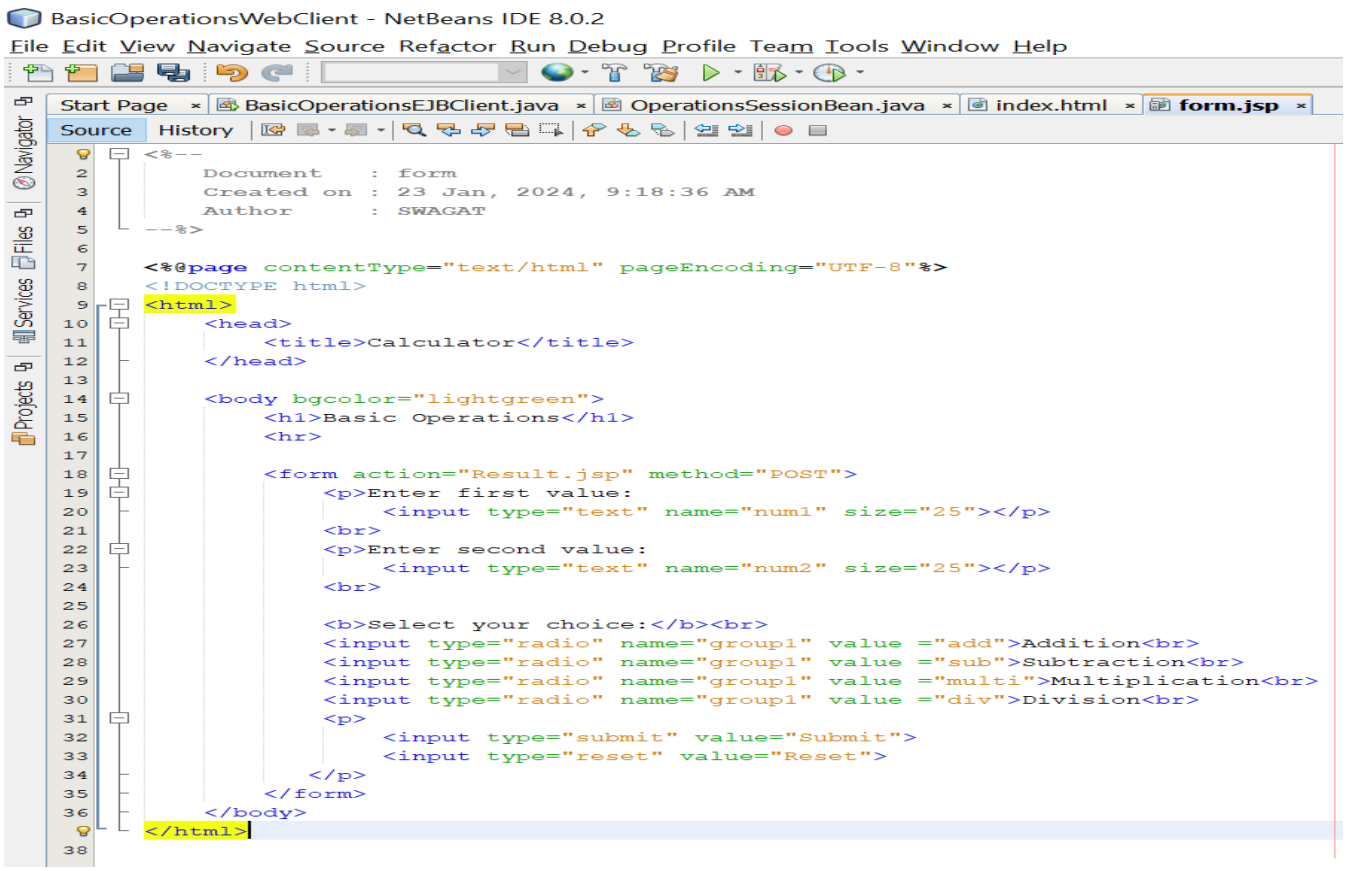
6. Create Web Application.





7.Create JSP Files.





New JSP

Steps

1. Choose File Type
2. **Name and Location**

Name and Location

File Name: Result

Project: BasicOperationsWebClient

Location: Web Pages

Folder: Browse...

Created File: D:\NetBeansProjects\BasicOperationsWebClient\web\Result.jsp

Options:

- (●) JSP File (Standard Syntax)
- ( ) JSP Document (XML Syntax)
- [ ] Create as a JSP Segment

Description:

A JSP file using JSP standard syntax.

< Back | Next > | Finish | Cancel | Help

BasicOperationsWebClient - NetBeans IDE 8.0.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

Start Page | BasicOperationsEJBClient.java | OperationsSessionBean.java | index.html | form.jsp | Result.jsp

Source | History

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@ page import="com.javacodegeeks.example.ejb.*, javax.naming.*"%>

<%!
    private OperationsSessionBeanRemote ops = null;
    float result = 0;

    public void jspInit() {
        try {

            InitialContext ic = new InitialContext();
            ops = (OperationsSessionBeanRemote)ic.lookup(OperationsSessionBeanRemote.class.getName());


            System.out.println("Loaded Calculator Bean");


        } catch (Exception ex) {
            System.out.println("Error:"
                    + ex.getMessage());
        }
    }

    public void jspDestroy() {
        ops = null;
    }
%>


<%

    try {
        String s1 = request.getParameter("num1");
        String s2 = request.getParameter("num2");
        String s3 = request.getParameter("group1");

        System.out.println(s3);

        if (s1 != null && s2 != null) {
            Float num1 = new Float(s1);
```

Breakpoints | Variables

BasicOperationsWebClient - NetBeans IDE 8.0.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

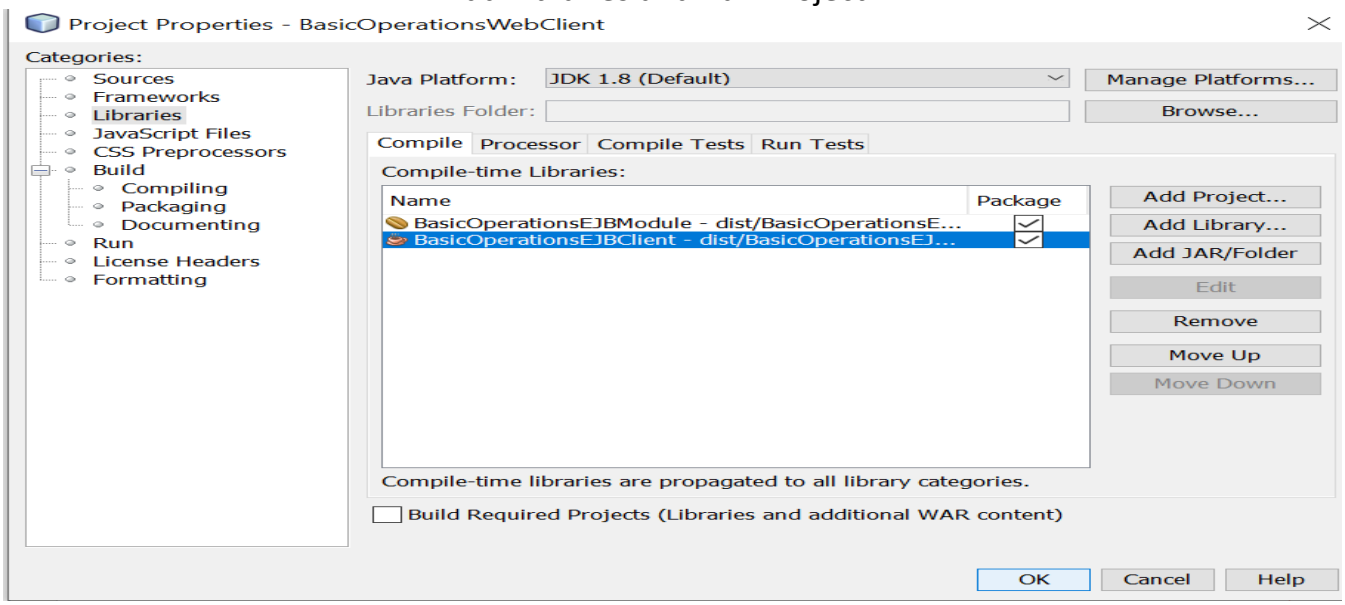
Start Page | BasicOperationsEJBClient.java | OperationsSessionBean.java | index.html | form.jsp

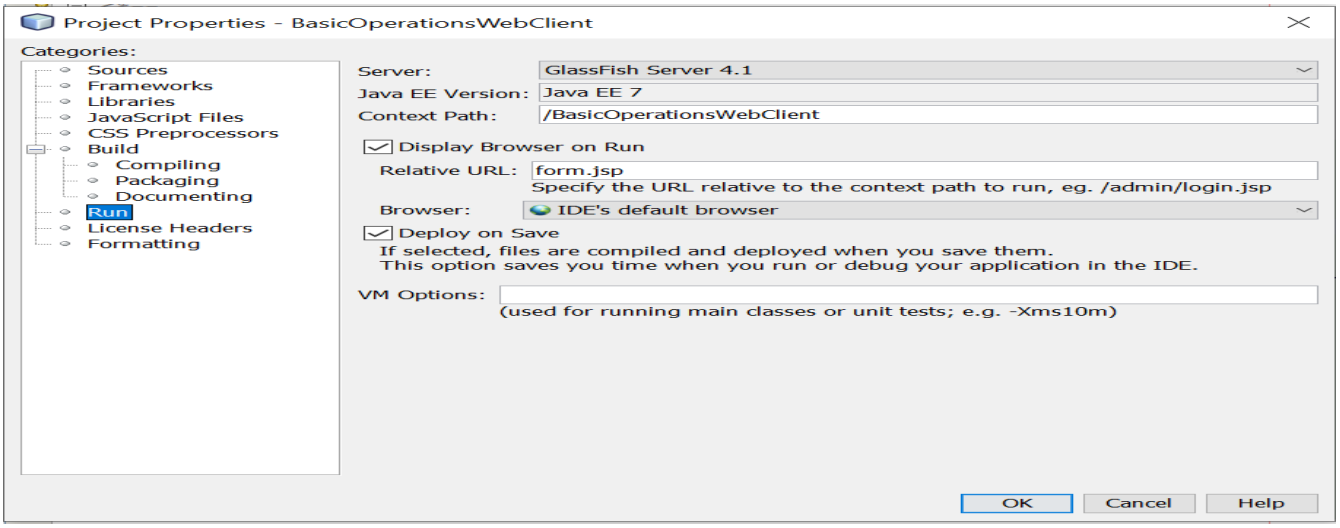
Source | History

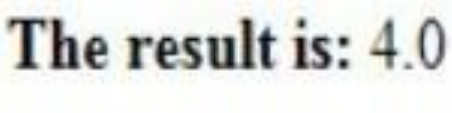
```
<%

    try {
        String s1 = request.getParameter("num1");
        String s2 = request.getParameter("num2");
        String s3 = request.getParameter("group1");

        System.out.println(s3);

        if (s1 != null && s2 != null) {
            Float num1 = new Float(s1);
            Float num2 = new Float(s2);

            if (s3.equals("add")) {
                result = ops.add(num1.floatValue(), num2.floatValue());
            } else if (s3.equals("sub")) {
                result = ops.subtract(num1.floatValue(), num2.floatValue());
            } else if (s3.equals("multi")) {
                result = ops.mutliply(num1.floatValue(), num2.floatValue());
            } else {
                result = ops.divide(num1.floatValue(), num2.floatValue());
            }

%>
<p>
    <b>The result is:</b> <%= result%>
<p>

    <%
            }
        }// end of try
        catch (Exception e) {
            e.printStackTrace();
            //result = "Not valid";
        }
    %>
```

Breakpoints | Variables

1. Add Libraries and Run Project.







Conclusion:

Practical No:7

Aim: Write a program to create Java POJO class.

Objective: Develop a Java program to create a Plain Old Java Object (POJO) class.

Description: This Java program focuses on creating a Plain Old Java Object (POJO) class, typically used toencapsulate data and provide getters and setters for accessing and modifying the object's attributes. A POJO class does not contain any business logic or dependencies on specific frameworks, emphasizing simplicity and reusability.

Program:

```
public class Person {
   private String name;
   private int age;
   private String email;

   public Person() {
      // Default constructor
   }

   public Person(String name, int age, String email) {
      this.name = name;
      this.age = age;
      this.email = email;
   }

   public String getName() {
      return name;
   }

   public void setName(String name) {
      this.name = name;
   }

   public int getAge() {
      return age;
   }

   public void setAge(int age) {
      this.age = age;
   }

   public String getEmail() {
      return email;
   }

   public void setEmail(String email) {
      this.email = email;
   }
```

```
    @Override
    public String toString() {
        return "Person{" +
                "name='" + name + '\'' + ", age=" + age +
                ", email='" + email + '\'' + '}';
    }

    public static void main(String[] args) {
        Person person1 = new Person("John Doe", 25, "john.doe@example.com");
        Person person2 = new Person();

        person2.setName("Jane Doe");
        person2.setAge(30);
        person2.setEmail("jane.doe@example.com");

        System.out.println(person1);
        System.out.println(person2);
    }
}
```

```
dj@dheeraj MINGW64 ~/Desktop/mca-practical/java-practical (main)
$ javac Person.java

dj@dheeraj MINGW64 ~/Desktop/mca-practical/java-practical (main)
$ java Person
Person{name='John Doe', age=25, email='john.doe@example.com'}
Person{name='Jane Doe', age=30, email='jane.doe@example.com'}
```

Conclusion:

Practical No: 8

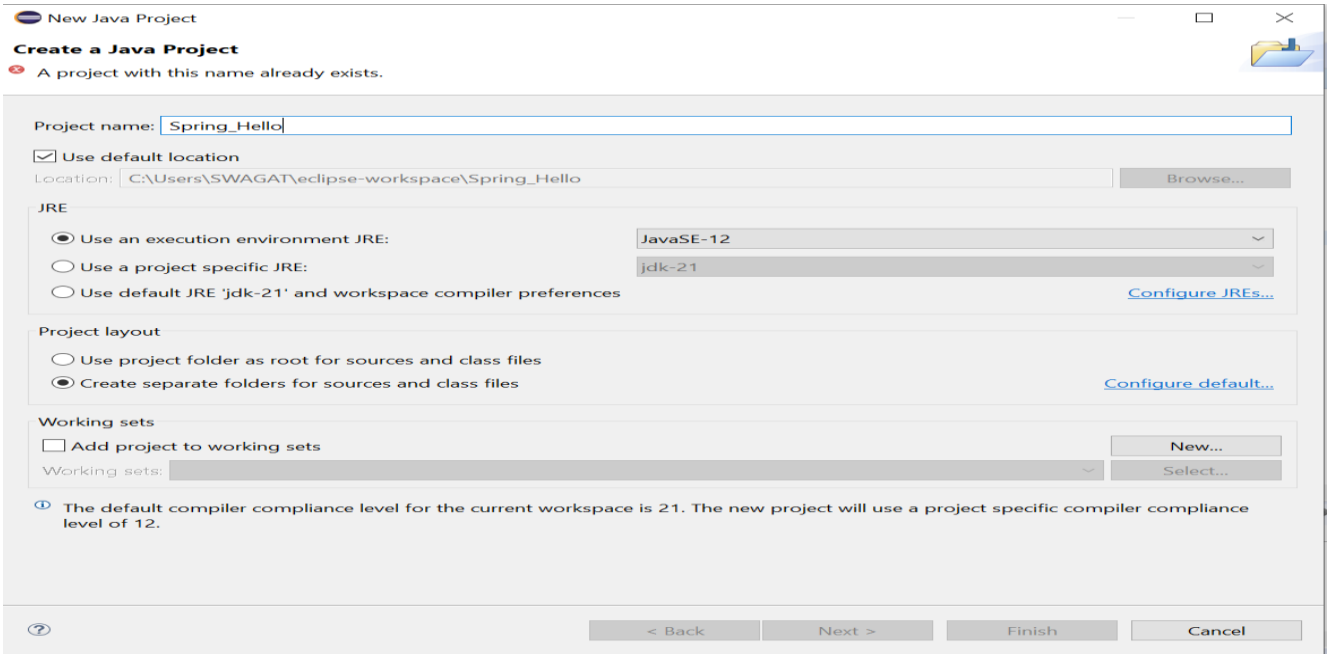
Aim: Write a program to print “Hello World” using spring framework.

Objective: Develop a Java program using the Spring framework to print the message "Hello World."

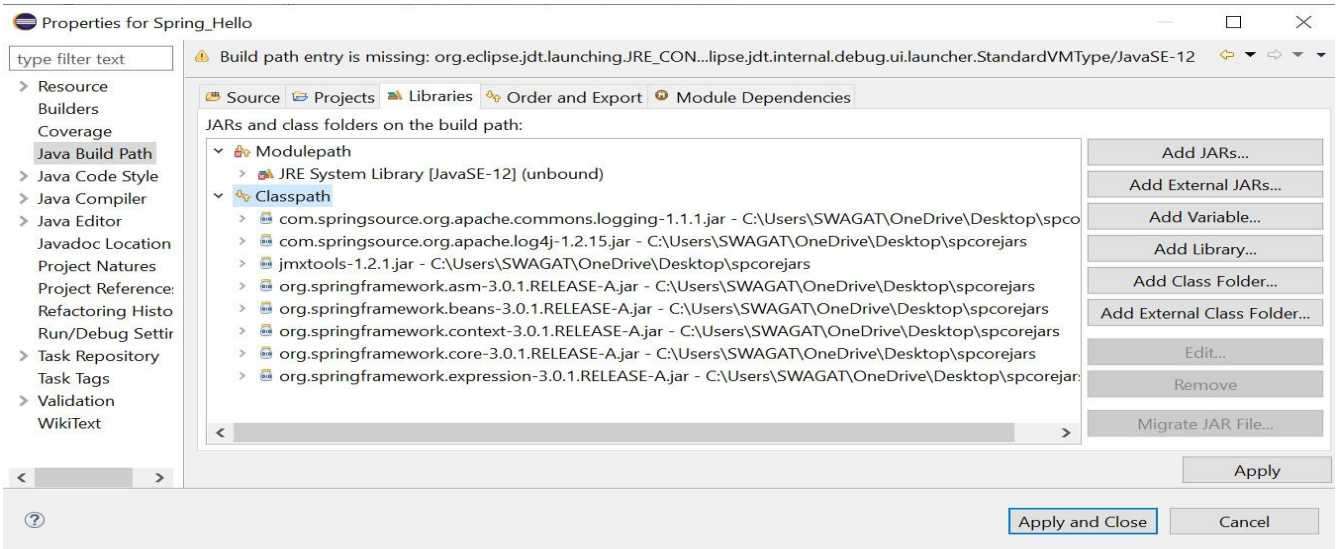
Description: This program utilizes the Spring framework, a widely-used framework for building Java applications, to create a simple application that prints the classic "Hello World" message. The simplicity and clarity of the Spring framework make it an effective choice for developing Java applications.

Program:

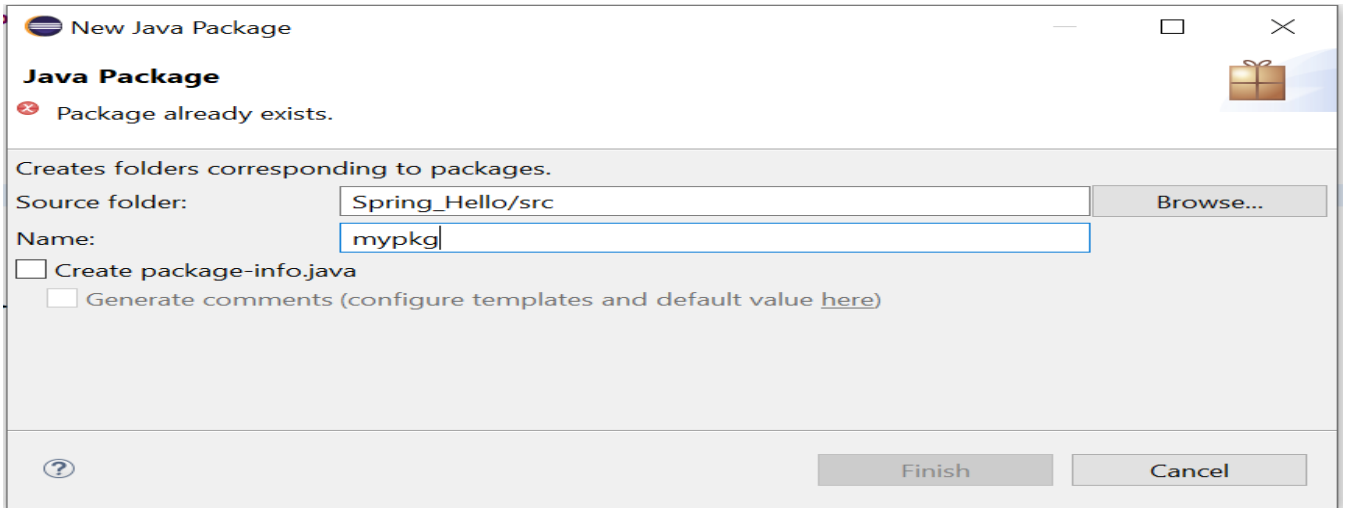
1. Create Java Project



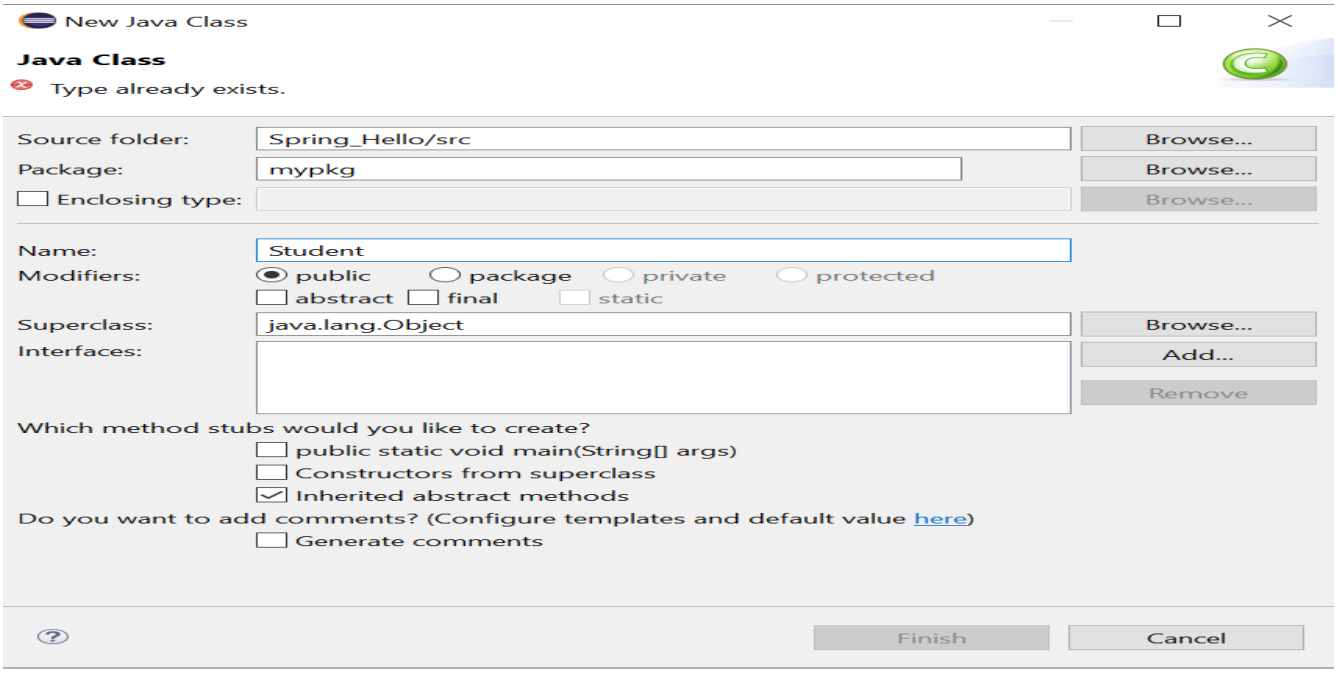
2. Import JAR Files.



3. Create package.



4. Create Class.

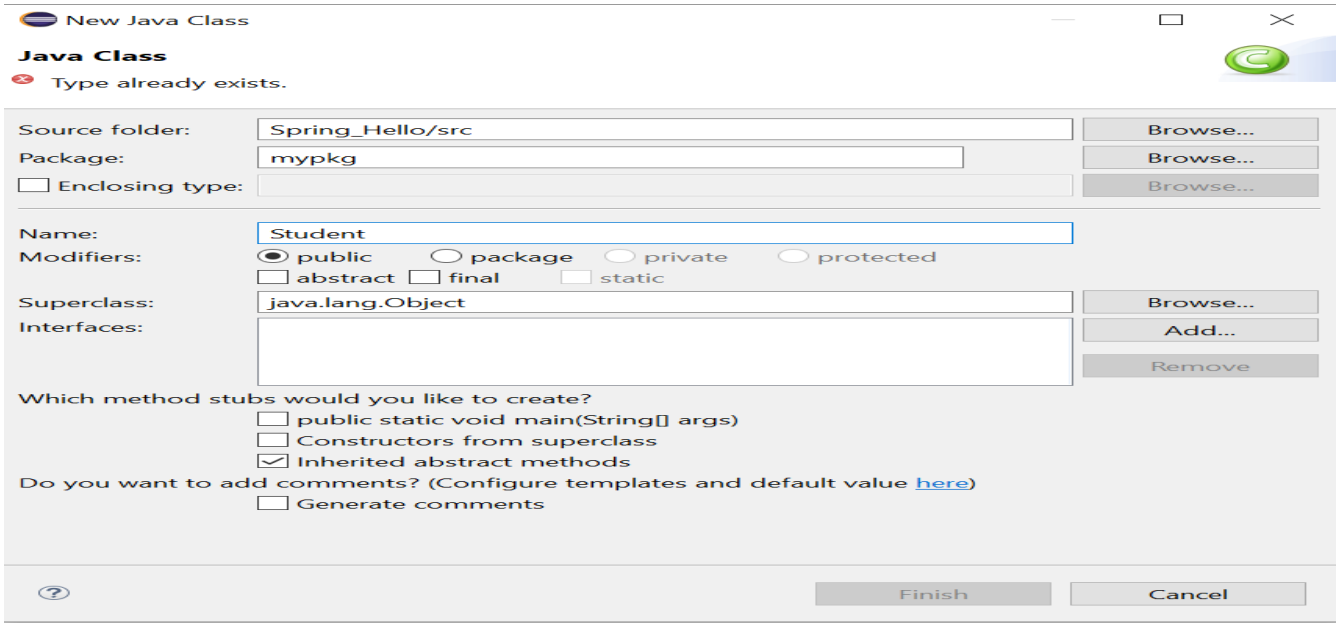



```
package mypkg;
public class Student {

private String name; public String getName() {return name;}
public void setName(String name) { this.name = name;}
public void displayInfo() { System.out.println("Hello: " + name);}
}
```

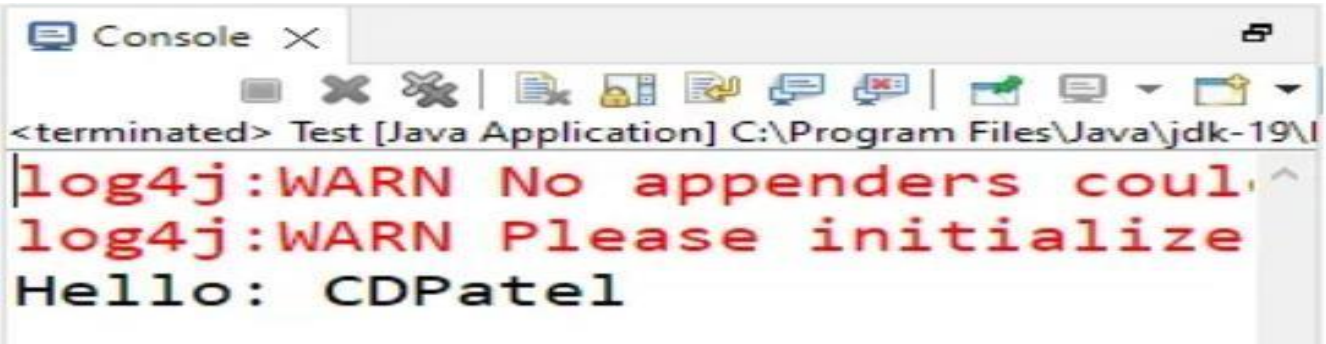
```
package mypkg;
import  org.springframework.beans.factory.BeanFactory;
import org.springframework.beans.factory.xml.XmlBeanFactory;
import org.springframework.core.io.ClassPathResource;
import org.springframework.core.io.Resource;
public class Test {
   public static void main(String[] args) {
      Resource resource = new ClassPathResource("applicationContext.xml");
```

```
        BeanFactory factory = new XmlBeanFactory(resource);
        Student student  = (Student)factory.getBean("studentbean");
        student.displayInfo();
    }

}
```

5. Create XML File.




```
<?xml version="1.0" encoding="UTF-8"?>
<beans
xmlns="http://www.springframework.org/schema/beans"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:p="http://www.springframework.org/schema/p"
xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans-3.0.xsd">
</beans>
```



Conclusion:

Practical No: 9

Aim: Write a program to insert, update and delete records from the given table.

Objective: Develop a Java program to perform basic database operations, including inserting, updating,and deleting records from a specified table.

Description: This program focuses on interacting with a database table, implementing functionalities to insert new records, update existing records, and delete records as needed. It demonstrates thefundamental operations for managing data in a database table using Java.

Program:

1. **Create a Table.**

```
CREATE TABLE userid(
id varchar2(30) NOT NULL PRIMARY KEY,
pwd varchar2(30) NOT NULL, fullname varchar2(50),
email varchar2(50)
    );
```

2. **Connection to Database.**

```
import java.sql.*;

public class connect {
   public static void main(String args[]) {

      try {
         Class.forName("oracle.jdbc.driver.OracleDriver");
         Connection con = DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:orcl",
      "login1", "pwd1");
         if (con != null)
            System.out.println("Connected");
         else

      System.out.println("Not
      Connected");
         con.close();
      } catch (Exception e) {

      System.out.println(e);
      }
   }
}
```

3. **Insert Statement.**

```
import java.sql.*;

public class insert1 {
public static void main(String args[])
{
   String id = "id1"; String pwd = "pwd1";
   String fullname = "geeks for geeks"; String email = "geeks@geeks.org";
try
{
   Class.forName("oracle.jdbc.driver.OracleDriver"); Connection con = DriverManager.getConnection("
            jdbc:oracle:thin:@localhost:1521:orcl", "login1", "pwd1");
   Statement stmt = con.createStatement();

   // Inserting data in database
   String q1 = "insert into userid values('" +id+ "', '" +pwd+"fullname+ "', '" +email+ "')";
   int x = stmt.executeUpdate(q1);
    if (x > 0)
            System.out.println("Successfully  Inserted");
   else
            System.out.println("Insert Failed");
   con.close();
}
   catch(Exception e)
   {
      System.out.println(e);
   }
 }
}
```

Output: Successfully Registered.

4. **Update Statement**.

```
import java.sql.*;
public class update1
{
    public static void main(String args[])
    {
        String id = "id1"; String pwd = "pwd1";
        String newPwd = "newpwd"; try
    {
    Class.forName("oracle.jdbc.driver.OracleDriver"); Connection con = DriverManager.getConnection("
    jdbc:oracle:thin:@localhost:1521:orcl", "login1", "pwd1");
    Statement stmt = con.createStatement();
```

```
    // Updating database
    String q1 = "UPDATE userid set pwd = '" + newPwd +
    "' WHERE id = '" +id+ "' AND pwd = '" + pwd + "'";
    int x = stmt.executeUpdate(q1);

    if (x > 0)
     System.out.println("Password Successfully  Updated");
    else
     System.out.println("ERROR OCCURRED :(");
     con.close();
    }
    catch(Exception e)
     {
      System.out.println(e);
     }
    }
  }
```

Output: Password Successfully Updated

5. Delete Statement.

```
import java.sql.*;

public class delete {
   public static void main(String args[]) {

      String id = "id2";
      String pwd = "pwd2";
      try {
         Class.forName("oracle.jdbc.driver.OracleDriver");
         Connection con = DriverManager.getConnection(" jdbc:oracle:thin:@localhost:1521:orcl",
     "login1", "pwd1");
         Statement stmt = con.createStatement();

         // Deleting from database
         String q1 = "DELETE from userid WHERE id = '" + id + "' AND pwd = '" + pwd + "'";
         int x = stmt.executeUpdate(q1);
         if (x > 0)
            System.out.println("One User Successfully Deleted");

         else
            System.out.println("ERROR OCCURRED :(");

         con.close();
      } catch (Exception e) {
         System.out.println(e);
      }
```

```
    }
}
```

Output: One User Successfully Deleted

Conclusion:

Practical No: 10

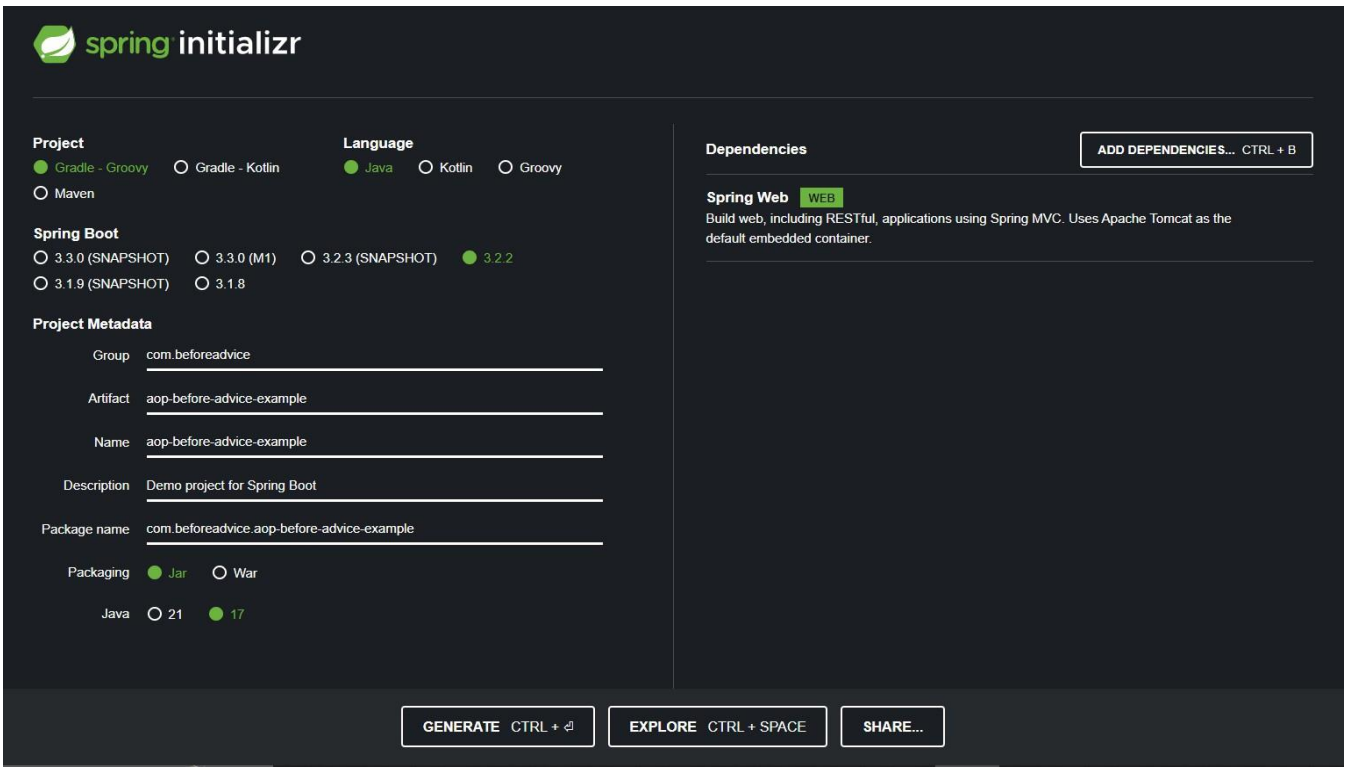
Aim: Write a program to demonstrate Spring AOP before advice.

Objective: Develop a Java program using the Spring framework to demonstrate the use of Aspect-Oriented Programming (AOP) with "before" advice.

Description: This program showcases the Spring AOP capability by implementing "before" advice, a type ofcross-cutting concern that executes before the target method. It provides a clear example of how AOP can be used to modularize and manage cross-cutting concerns in an application.

Program:

1. Open Spring Initializer http://start.spring.io
2. Provide the Group name: com.beforeadvice
3. Provide the Artifact Id: aop-before-advice-example
4. Add the Spring Web dependency.
5. Click on Generate button. Download and Extract it.



6. Import aop-before-advice-example Folder.
7. Add dependency for Spring AOP in pom.xml

```
<project xmlns="http://maven.apache.org/POM/4.0.0"
                xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
                xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
                                                http://maven.apache.org/xsd/maven-
4.0.0.xsd">
<modelVersion>4.0.0</modelVersion>
<groupId>com.beforeadvice</groupId>
<artifactId>aop-before-advice-example</artifactId>
<version>0.0.1-SNAPSHOT</version>

<packaging>jar</packaging>

<name>aop-before-advice-example</name>
<description>Demo project for Spring Boot</description>

<parent>
        <groupId>org.springframework.boot</groupId>
        <artifactId>spring-boot-starter-parent</artifactId>
        <version>2.2.2.RELEASE</version>
        <relativePath /> <!-- lookup parent from repository -->
</parent>

<properties>
        <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
        <project.reporting.outputEncoding>UTF-8</project.reporting.outputEncoding>
        <java.version>1.8</java.version>
</properties>

        <dependencies>
        <!-- dependency for spring web -->
        <dependency>
                <groupId>org.springframework.boot</groupId>
                <artifactId>spring-boot-starter-web</artifactId>
        </dependency>

        <!-- added dependency for spring aop -->
        <dependency>
                <groupId>org.springframework.boot</groupId>
                <artifactId>spring-boot-starter-aop</artifactId>
                </dependency>
        </dependencies>

<build>
<plugins>
<plugin>
<groupId>org.springframework.boot</groupId>
```

```
<artifactId>spring-boot-maven-plugin</artifactId>
</plugin>
</plugins>
</build>

</project>
```

8. Create package com.beforeadvice.model and Add Student Model.

```
package com.beforeadvice.model;

public class Student {
	private String firstName;
	private String secondName;

	public Student() {}

	public String getFirstName() { return firstName; }public

	void setFirstName(String firstName)
	{
		this.firstName = firstName;
	}

	public String getSecondName() { return secondName; }

	public void setSecondName(String secondName)
	{
		this.secondName = secondName;
	}
}
```

9. Create package com.beforeadvice.service and Add StudentService class.

```
package com.beforeadvice.service;

import com.beforeadvice.model.Student;
import org.springframework.stereotype.Service;

@Service
public class StudentService {

	public Student addStudent(String fname, String sname)
	{
		System.out.println(
			"Add student service method called");Student
		stud = new Student(); stud.setFirstName(fname);
		stud.setSecondName(sname);
```

```
                return stud;
        }
}
```

10. Create package com.beforeadvice.controller and Add StudentController class

```
package com.beforeadvice.controller;

import com.beforeadvice.model.Student;
import com.beforeadvice.service.StudentService;
import org.springframework.beans.factory.annotation.Autowired; import
org.springframework.web.bind.annotation.GetMapping; import
org.springframework.web.bind.annotation.RequestParam;import
org.springframework.web.bind.annotation.RestController;

@RestController
public class StudentController {

        @Autowired private StudentService studentService;

        @GetMapping(value = "/add")
        public Student addStudent(
                @RequestParam("firstName") String firstName,
                @RequestParam("secondName") String secondName)
        {
                return studentService.addStudent(firstName,
                                                secondName);
        }
}
```

11. Create package com.beforeadvice.aspect and Add StudentServiceAspect class.

```
package com.beforeadvice.aspect;

import org.aspectj.lang.JoinPoint;
import org.aspectj.lang.annotation.Aspect;
import org.aspectj.lang.annotation.Before;
import org.aspectj.lang.annotation.Pointcut;
import org.springframework.stereotype.Component;

@Aspect
@Component
public class StudentServiceAspect {

        // the pointcut expression specifying execution of any
        // method in com.beforeadvice.service.StudentService
        // class of any return type with 0 or more number of
        // arguments
        @Pointcut("execution(* com.beforeadvice.service.StudentService.*(..)) ")
```

```
        private void anyStudentService() {} // the pointcut signature

        @Before("anyStudentService() && args(fname, sname)")
        public void beforeAdvice(JoinPoint joinPoint,
                                                String fname, String sname)
        {
                System.out.println(
                        "Before method:" + joinPoint.getSignature()+ "\n Adding Student
with first name- "
                        + fname + ", second name- " + sname);
        }
}
```

Conclusion: