PROGRAM 1: Greetings Page

index.xhtml

```xml
<?xml version='1.0' encoding='UTF-8' ?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
    xmlns:h="http://xmlns.jcp.org/jsf/html">
  <h:head>
    <title>Hello There</title>
  </h:head>
  <h:body>
    <h:form>
      <h:outputLabel><h2>Hi, what's your name?</h2></h:outputLabel>
      <h:inputText maxlength="10" required="true" value="#{greetingsBean.userName}"
requiredMessage="Please enter your name."/>
      <br/><br/>
      <h:commandButton value="Submit" action="#{greetingsBean.greetUser}" />
    </h:form>
  </h:body>
</html>
```

greeting.xhtml

```xml
<?xml version='1.0' encoding='UTF-8' ?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
    xmlns:h="http://xmlns.jcp.org/jsf/html">
  <h:head>
    <title>Greeting</title>
  </h:head>
  <h:body>
    <h:outputLabel><h2>Hello there, #{greetingsBean.userName}. Nice to meet
you.</h2></h:outputLabel>
  </h:body>
</html>
```

GreetingsBean.java

```java
import javax.faces.bean.ManagedBean;
import javax.faces.bean.RequestScoped;

@ManagedBean
@RequestScoped
public class GreetingsBean {

    private String userName = "";


    public GreetingsBean() {
        System.out.println("Created GreetingsBean instance...");
    }

    public String getUserName() {
        return this.userName.trim();
    }

    public void setUserName(String userName) {
        this.userName = userName.trim();
    }

    public String greetUser() {
        return "greeting";
    }
}
```

Output:

Hi, what's your name?

Obi-Wan

Submit

Hello there, Obi-Wan. Nice to meet you.

PROGRAM 2: Guest Log

index.html

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
    xmlns:f="http://java.sun.com/jsf/core"
    xmlns:h="http://java.sun.com/jsf/html">
  <h:head>
    <title>Guest Log</title>

  </h:head>
  <h:body>
    <h:form>
      <h:commandButton value="Create Entry" action="#{entryBean.addEntry}" />
    </h:form>
    <h2>Entry Details</h2>
    <h:dataTable value="#{logBean.entries}" var="entry" border="2">
      <h:column>
        <f:facet name="header">Date</f:facet>
          #{entry.date}
      </h:column>
      <h:column>
        <f:facet name="header">Name</f:facet>
          #{entry.name}
      </h:column>
      <h:column>
        <f:facet name="header">Email</f:facet>
          #{entry.email}
      </h:column>
      <h:column>
        <f:facet name="header">Message</f:facet>
          #{entry.message}
      </h:column>
    </h:dataTable>
  </h:body>
</html>
```

addEntry.xhtml

```xml
<?xml version='1.0' encoding='UTF-8' ?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
    xmlns:h="http://xmlns.jcp.org/jsf/html">
  <h:head>
    <title>Add Entry</title>
  </h:head>
  <h:body>
    <h:form>
      <h:outputLabel><h2>Enter your name:</h2></h:outputLabel>
      <h:inputText maxlength="10" required="true" value="#{entryBean.name}"
requiredMessage="Please enter your name."/>
      <br/>

      <h:outputLabel><h2>Enter your email:</h2></h:outputLabel>
      <h:inputText maxlength="30" required="true" value="#{entryBean.email}"
requiredMessage="Please enter your email."/>
      <br/>

      <h:outputLabel><h2>Enter your comments:</h2></h:outputLabel>
      <h:inputText maxlength="30" required="true" value="#{entryBean.message}"
requiredMessage="Please enter your comments."/>
      <br/>

      <h:commandButton value="Submit" action="#{entryBean.addUser}" />
    </h:form>
  </h:body>
</html>
```

Log.java

```java
package com.mycompany.logBook;

public class Log {

    private String date;
    private String name;
    private String email;
    private String message;
```

```java
    public Log() {
    }

    public Log(String date, String name, String email, String message) {
        this.date = date;
        this.name = name;
        this.email = email;
        this.message = message;
    }

    public String getDate() {
        return date;
    }

    public String getName() {
        return name;
    }

    public String getEmail() {
        return email;
    }

    public String getMessage() {
        return message;
    }

    public void setDate(String date) {
        this.date = date;
    }

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

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

    public void setMessage(String message) {
        this.message = message;
    }

}
```

LogBean.java

```java
package com.mycompany.logBook;

import java.io.Serializable;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.util.ArrayList;
import java.util.List;
import javax.faces.bean.ManagedBean;
import javax.faces.bean.SessionScoped;

@ManagedBean
@SessionScoped
public class LogBean implements Serializable {

    private static final long serialVersionUID = 6081417964063918994L;

    public List<Log> getEntries() throws ClassNotFoundException, SQLException {

        Connection connect = null;

        String url = "jdbc:mysql://localhost:3306/temp";

        String username = "root";
        String password = "";

        try {

            Class.forName("com.mysql.jdbc.Driver");

            connect = DriverManager.getConnection(url, username, password);
            // System.out.println("Connection established"+connect);

        } catch (SQLException ex) {
            System.out.println("in exec");
            System.out.println(ex.getMessage());
        }
```

```java
        List<Log> entries = new ArrayList<Log>();
        PreparedStatement pstmt = connect
                .prepareStatement("select * from MESSAGES");
        ResultSet rs = pstmt.executeQuery();

        while (rs.next()) {

            Log car = new Log();
            car.setDate(rs.getString("Date"));
            car.setEmail(rs.getString("Email"));
            car.setName(rs.getString("Name"));
            car.setMessage(rs.getString("Message"));

            entries.add(car);

        }

        rs.close();
        pstmt.close();
        connect.close();

        return entries;

    }

}
```

EntryBean.java

```java
package com.mycompany.logBook;


import javax.faces.bean.RequestScoped;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.SQLException;
import javax.faces.bean.ManagedBean;

@ManagedBean
@RequestScoped
public class EntryBean {
```

```java
private String date;
private String name;
private String email;
private String message;

/**
 * Creates a new instance of GreetingsBean
 */
public EntryBean() {
    System.out.println("Created GreetingsBean instance...");
}

public String getDate() {
    return date;
}

public String getName() {
    return name;
}

public String getEmail() {
    return email;
}

public String getMessage() {
    return message;
}

public void setDate(String date) {
    this.date = date;
}

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

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

public void setMessage(String message) {
    this.message = message;
}
```

```java
    public String addEntry() {

        return "addEntry";
    }

    public String addUser() throws ClassNotFoundException, SQLException {

        java.util.Date dt = new java.util.Date();
        java.text.SimpleDateFormat sdf = new java.text.SimpleDateFormat("yyyy-MM-dd");

        String date = sdf.format(dt);
        Connection connect = null;

        String url = "jdbc:mysql://localhost:3306/temp";

        String username = "root";
        String password = "";

        try {

            Class.forName("com.mysql.jdbc.Driver");

            connect = DriverManager.getConnection(url, username, password);

        } catch (SQLException ex) {
            System.out.println("in exec");
            System.out.println(ex.getMessage());
        }
        PreparedStatement pstmt = connect
                .prepareStatement("INSERT INTO MESSAGES VALUES ('" + date + "','"
                    + name + "','" + email +"','"+ message + "')");
        int rs = pstmt.executeUpdate();

        pstmt.close();
        connect.close();

        return "index";
    }
}
```

Output:

Create Entry

Entry Details

Date	Name	Email	Message
2021-03-09	Shankar	shank@gmail.com	this place is amazing!!
2021-03-02	Ramu	ram@gmail.com	good food
2021-03-16	Adish	ad19@gmail.com	amazing experience

Enter your name:

harsh

Enter your email:

harsh@gmail.com

Enter your comments:

great customer service

Submit

Create Entry

Entry Details

Date	Name	Email	Message
2021-03-09	Shankar	shank@gmail.com	this place is amazing!!
2021-03-02	Ramu	ram@gmail.com	good food
2021-03-16	Adish	ad19@gmail.com	amazing experience
2021-03-16	harsh	harsh@gmail.com	great customer service

PROGRAM 3: Calculator

index.xhtml

```
<?xml version='1.0' encoding='UTF-8' ?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
      xmlns:h="http://xmlns.jcp.org/jsf/html">
  <h:head>
    <title>Calculator</title>
  </h:head>
  <h:body>
    <h:form>
      Number 1:<h:inputText id="num1" value="#{calculator.num1}"/><br>
      Number 2:<h:inputText id="num2" value="#{calculator.num2}"/></br>
      #{calculator.operation} is <h:outputText id="sum" value="#{calculator.sum}"/><br>
      <h:commandButton actionListener="#{calculator.addNumber}" value="Add"/>
      <h:commandButton actionListener="#{calculator.subNumber}" value="Sub"/>
      <h:commandButton actionListener="#{calculator.mulNumber}" value="Mul"/>
      <h:commandButton actionListener="#{calculator.divNumber}" value="Div"/></br>
    </h:form>
  </h:body>
</html>
```

Calculator.java

```
package com.mycompany.calculator;
import javax.faces.event.ActionEvent;
import javax.faces.bean.ManagedBean;
import javax.faces.bean.RequestScoped;

@ManagedBean
@RequestScoped

public class Calculator {
    private int num1, num2;
    private double sum;
    private String operation;

    public Calculator(){
```

```java
    }

    public String getOperation() {
        return operation;
    }

    public int getNum1() {
        return num1;
    }

    public int getNum2() {
        return num2;
    }

    public double getSum() {
        return sum;
    }

    public void setNum1(int num1) {
        this.num1 = num1;
    }

    public void setNum2(int num2) {
        this.num2 = num2;
    }

    public void setSum(int sum) {
        this.sum = sum;
    }

    public void addNumber(ActionEvent e){
        sum = num1+num2;
        operation = "Sum";
    }

    public void subNumber(ActionEvent e){
        sum = num1-num2;
        operation = "Difference";
    }
    public void mulNumber(ActionEvent e){
        sum = num1*num2;
        operation = "Product";
    }
```

```
    public void divNumber(ActionEvent e){
        sum = 1.0*num1/num2;
        operation = "Quotient";
    }

}
```

Output:

Number 1: 17
Number 2: 6
Sum is 23.0
[Add] [Sub] [Mul] [Div]

Number 1: 17
Number 2: 6
Difference is 11.0
[Add] [Sub] [Mul] [Div]

Number 1: 17
Number 2: 6
Product is 102.0
[Add] [Sub] [Mul] [Div]

Number 1: 17
Number 2: 6
Quotient is 2.8333333333333335
[Add] [Sub] [Mul] [Div]