School of IT

Institute of Management Studies – Noida

BCA 2025-2026

Java Programming and Dynamic Web Page Design

Assignment (BCA-502)

Submitted To:

Prof. Anushrav Mudgal

Submitted by: Joy Clarence

Roll No. 230919000265

Git hub Link - https://github.com/joyclarence211-design/-Java-

Answer 1.

```
class Student {
    String name;
    int rollNo;

    Student(String name, int rollNo)
    {
this.name = name;
this.rollNo = rollNo;

    }

    void display() {
        System.out.println("Name: " + name + ", Roll No: " + rollNo);
    }
}

class BCAStudent extends Student {
    int semester;

    BCAStudent(String name, int rollNo, int semester) {
        super(name, rollNo);
        this.semester = semester;
    }

    void display() {
```

```java
        System.out.println("Name: " + name + ", Roll No: " + rollNo + ", Semester: " + semester);
    }
}


public class Main {
    public static void main(String[] args) {
        BCAStudent[] students = new BCAStudent[3];


        students[0] = new BCAStudent("Pranjal", 45, 1);

        students[1] = new BCAStudent("Naval", 32, 2);

        students[2] = new BCAStudent("Joy", 21, 3);

        System.out.println("BCA Student Details:");

        for (int i = 0; i < students.length; i++) {

            students[i].display();

        }

        try {

            System.out.println("\nTrying to access invalid index...");

            System.out.println(students[5].name); // This will cause ArrayIndexOutOfBoundsException

        }

     catch (ArrayIndexOutOfBoundsException e) {

            System.out.println("Exception caught: " + e);

        }

    catch (NumberFormatException e) {

            System.out.println("Number format error: " + e);

        }
```

```java
        System.out.println("\nProgram executed successfully!");

    }

}
```

Output :

```
BCA Student Details:
Name: Pranjal, Roll No: 45, Semester: 1
Name: Naval, Roll No: 32, Semester: 2
Name: Joy, Roll No: 21, Semester: 3

Trying to access invalid index...
Exception caught: java.lang.ArrayIndexOutOfBoundsException: Index 5 out of
    bounds for length 3

Program executed successfully!

=== Code Execution Successful ===
```

Answer 2.

```java
import java.awt.*;

import java.awt.event.*;

class AWTExampleJoy extends Frame implements ActionListener {
    Label label;
    TextField textField;
    Button button;
    AWTExampleJoy() {
        // Set layout manager
        setLayout(new FlowLayout());

        label = new Label("Enter your name:");
        textField = new TextField(20);

        button = new Button("Click Me");

        add(label);

        add(textField);

        add(button);

        button.addActionListener(this);

        setTitle("AWT Example - Joy");

        setSize(300, 150);

        setVisible(true);

        addWindowListener(new WindowAdapter() {
            public void windowClosing(WindowEvent e) {
                System.exit(0);
```

```java
      }
    };
  }
  public void actionPerformed(ActionEvent e) {
    String name = textField.getText();
    if (name.isEmpty()) {
      name = "Joy"; // Default name if nothing entered
    }
    System.out.println("Hello, " + name + "!");
  }
  public static void main(String[] args) {
    new AWTExampleJoy();
  }
}
```
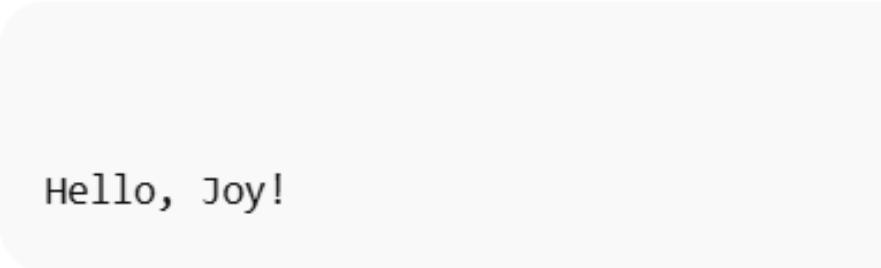
Output:

If user types **Joy** and clicks the button:

```
Hello, Joy!
```

Answer 3.

```java
import java.io.*;

Import

java.net.*;

    public class TCPServer {

     public static void
       main(String[] args) throws
       IOException { ServerSocket
       welcomeSocket = new
       ServerSocket(9876);


       while (true) {
        Socket connectionSocket =
        welcomeSocket.accept();
        BufferedReader
        inFromClient = new
        BufferedReader(new

    InputStreamReader(connectionSocket.getInputStream()));

        DataOutputStream outToClient = new
        DataOutputStream(connectionSocket.getOutputStream());


        String clientSentence =
        inFromClient.readLine();
        System.out.println("Receiv
        ed: " + clientSentence);


        String capitalizedSentence =
        clientSentence.toUpperCase() + '\n';
```

```
            outToClient.writeBytes(capitalizedS
            entence);

        }

      }

      }
```

TCPClient.jav

a Import

java.io*; Import

Java.net.*;

```
        Socket connectionSocket =
        welcomeSocket.accept();
        BufferedReader
        inFromClient = new
        BufferedReader(new

    InputStreamReader(connectionSocket.getInputStream()));

        DataOutputStream outToClient = new
        DataOutputStream(connectionSocket.getOutputStream());


        String clientSentence =
        inFromClient.readLine();
        System.out.println("Receiv
        ed: " + clientSentence);


        String capitalizedSentence =
        clientSentence.toUpperCase() + '\n';
        outToClient.writeBytes(capitalizedS
        entence);
```

```
        }

      }

      }
```

TCPClient.jav

a Import

java.io*; Import

Java.net.*;

```
      }
```

JdbcInsert.java

Import java.sql.Connection;
Import java.sql.DriveManager;
Import
java.sql.PreparedStatement;
Import java.sql.SQLException;

```
    public class JdbcInsert {
      public static void main(String[] args)
        { String url =
        "jdbc:mysql://localhost:3
        306/javatestdb"; String
        user = "root";
        String password = "Parv";

        Connecti
        on con =
        null;
        Prepared
        Statemen
        t pstmt =
```

```java
null;

try {
    Class.forName("com.mysql.cj.jdbc.Driver");

    con =
    DriverManager.getConne
    ction(url, user, password);
    System.out.println("Con
    nection Successful");

    String sql = "INSERT INTO students
    (roll_number, student_name) VALUES
    (?, ?)"; pstmt =
    con.prepareStatement(sql);

    pstmt.setI
    nt(1,
    12345);
    pstmt.set
    String(2,
    "Parv
    Attrey");
    int
    rowsAffected =
    pstmt.executeU
    pdate(); if
    (rowsAffected
    > 0) {
        System.out.println("Record Inserted");
    }
```

```java
        } catch
          (ClassNotFoundE
          xception e)
          {
          System.err.print
          ln("JDBC Driver
          not found.");
        } catch (SQLException e) {
          System.err.println("SQL Error occurred: " + e.getMessage());
        } finally { try {
            if
            (pstmt !
            = null)
            pstmt.cl
            ose(); if
            (con !=
            null)
            con.clos
            e();
          } catch
            (SQL
            Excep
            tion e)
            { e.pri
            ntStac
            kTrac
            e();
          }
        }
      }
    }

      ln("JDBC Driver
      not found.");
```

```java
        } catch (SQLException e) {
            System.err.println("SQL Error occurred: " + e.getMessage());
        } finally { try {
            if
            (pstmt !
            = null)
            pstmt.cl
            ose(); if
            (con !=
            null)
            con.clos
            e();
        } catch
            (SQL
            Excep
            tion e)
            { e.pri
            ntStac
            kTrac
            e();
            }
        }
    }
}
```

Answer 4.

```html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Joy Clarence - Profile</title>
</head>
<body style="font-family: Arial, sans-serif; background-color: #f4f6f8; margin: 40px;">


  <h1 style="color: #2c3e50;">Joy Clarence</h1>
  <p><b>Student ID:</b> <code>230919000265</code></p>


  <hr>
  <h2>About Me</h2>
  <p>
    Hello! My name is <b>Joy Clarence</b>, and I'm a dedicated <i>Computer Science student</i> passionate about learning programming, algorithms, and web development.<br>
    I enjoy creating innovative web pages and solving complex problems through coding.
  </p>
```

```html
<hr>

<h2>My College</h2>
<div style="text-align:center;">
    <img src="images.jpeg" alt="IMS Noida College Logo" style="max-width:180px; height:auto;">
</div>
<p>I am currently pursuing my studies at <b>IMS Noida</b>.</p>

<hr>
<h2>My Subjects</h2>
<table border="1" cellpadding="8" cellspacing="0" style="border-collapse: collapse;">
    <tr style="background-color: #dfe6e9;">
        <th>Subject Code</th>
        <th>Subject Name</th>
    </tr>
    <tr>
        <td>CS201</td>
        <td>Java Programming and Dynamic Webpage Design</td>
    </tr>
    <tr>
        <td>CS202</td>
        <td>Data Structures and Algorithms</td>
    </tr>
```

```html
        <tr>
            <td>CS203</td>
            <td>Database Management Systems</td>
        </tr>
        <tr>
            <td>CS204</td>
            <td>Operating Systems</td>
        </tr>
        <tr>
            <td>CS205</td>
            <td>Computer Network</td>
        </tr>
    </table>


    <hr>


    <h2>Feedback Form</h2>
    <form>
        <label for="username">Username: </label>
        <input type="text" id="username" name="username" placeholder="Enter your name">
        <input type="submit" value="Submit">
    </form>
    <hr>
    <h2>My GitHub Repository</h2>
```

```
<p>

    Check out my project on GitHub:

    <a href="https://github.com/joy-clarence" target="_blank">Joy's
GitHub Repository</a>

    </p>
    <hr>

    <p style="text-align:center;">&copy; 2025 Joy Clarence. All Rights
Reserved.</p>

</body>

</html>
```

Output:

Joy Clarence

Student ID: 230919000265

About Me

Hello! My name is Joy Clarence, and I'm a dedicated *Computer Science student* passionate about learning programming, algorithms, and web development.
I enjoy creating innovative web pages and solving complex problems through coding.

My College

I am currently pursuing my studies at IMS Noida.

My Subjects

Subject Code	Subject Name
CS201	Java Programming and Dynamic Webpage Design
CS202	Data Structures and Algorithms
CS203	Database Management Systems
CS204	Operating Systems
CS205	Computer Network

Feedback Form

Username: Enter your name   [Submit]