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-Assignment---3

Answer 1.

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

```java
			+ 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();
    }
}
```
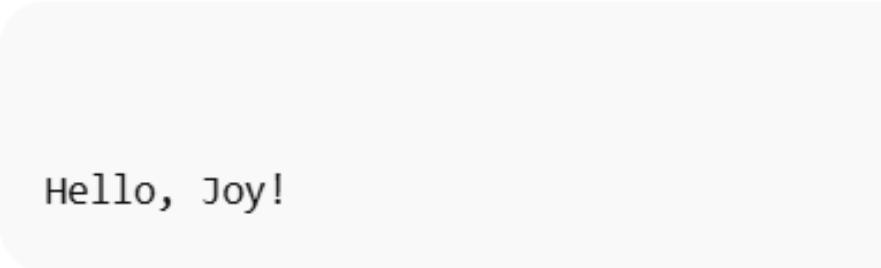
Output:

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';
```

```java
            outToClient.writeBytes(capitalizedS
            entence);

        }

    }

}
```

TCPClient.jav

a Import

java.io*; Import

Java.net.*;

```java
        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>
```

```html
<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]