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INSTITUTE OF MANAGEMENT STUDIES
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GRADE 'A' INSTITUTE BY UGC-NAAC

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

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() {  
        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);
```

```
        }
```

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

Output :

BCA Student Details:

Name: Pranjali, 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.

```
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);
            }
        });
    }
}
```

```

        }
    };
}

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 AWTEExampleJoy();
}
}

```

Output:

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

Hello, Joy!

Answer 3.

```
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.DriverManager;
```

```
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 =
```

```
        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");
}

} 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.");
    } catch (SQLException e) {
        System.err.println("SQL Error occurred: " + e.getMessage());
    } finally { try {
        if

```

```

        (pstmt !=
        null)
        pstmt.close(); if
        (con !=
        null)
        con.close();
    } catch
    (SQLException e)
    { e.printStackTrace();
    }
}
}
}

```

Answer 4.

```
<!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 Joy Clarence, and I'm a dedicated
<i>Computer Science student</i> passionate about learning
programming, algorithms, and web development.

I enjoy creating innovative web pages and solving complex
problems through coding.

</p>

<hr>

<h2>My College</h2>

<div style="text-align:center;">

</div>

<p>I am currently pursuing my studies at IMS Noida.</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>

<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:

Joy's
GitHub Repository

</p>

<hr>

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

</body>

</html>

Output:


Joy Clarence

Student ID: 230913000205

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

Activate Windows

Go to Settings to activate Windows.

