

JPR - Practical - QB - Solutions - By - Th3_

1. Write a program for implementation of different methods of a. string class b. stringBuffer class.

```
public class StringDemo {
    public static void main(String[] args) {
        // String class methods
        String str = "Hello World";
        System.out.println("Length: " + str.length());
        System.out.println("Upper: " + str.toUpperCase());
        System.out.println("Substring: " + str.substring(0, 5));
        System.out.println("CharAt: " + str.charAt(1));

        // StringBuffer class methods
        StringBuffer sb = new StringBuffer("Hello");
        sb.append(" World");
        System.out.println("Appended: " + sb);
        sb.insert(5, " Java");
        System.out.println("Inserted: " + sb);
        sb.replace(6, 10, "Awesome");
        System.out.println("Replaced: " + sb);
        sb.reverse();
        System.out.println("Reversed: " + sb);
    }
}
```

```
Length: 11
Upper: HELLO WORLD
Substring: Hello
CharAt: e
Appended: Hello World
Inserted: Hello Java World
Replaced: Hello Awesome World
Reversed: dlrow emosewA olleH
```

2. Write a program to implement a multidimensional array.

```
public class MultiArray {
    public static void main(String[] args) {
        int[][] arr = {
            {1, 2, 3},
            {4, 5, 6}
        };
        for (int i = 0; i < arr.length; i++) {
            for (int j = 0; j < arr[i].length; j++) {
                System.out.print(arr[i][j] + " ");
            }
            System.out.println();
        }
    }
}
```

```
1 2 3
4 5 6
```

3. Write a program to implement a parameterized constructor.

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

    Student(String n, int a) {
        name = n;
        age = a;
    }

    void display() {
        System.out.println("Name: " + name + ", Age: " + age);
    }

    public static void main(String[] args) {
        Student s1 = new Student("Th3", 17);
        s1.display();
    }
}
```

Name: Th3, Age: 17**4. Write a program to implement multilevel inheritance.**

```
class Animal {
    void sound() {
        System.out.println("Animal makes sound");
    }
}

class Dog extends Animal {
    void bark() {
        System.out.println("Dog barks");
    }
}

class Puppy extends Dog {
    void weep() {
        System.out.println("Puppy weeps");
    }
}
```

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```
public static void main(String[] args) {  
    Puppy p = new Puppy();  
    p.sound();  
    p.bark();  
    p.weep();  
}  
}
```

```
Animal makes sound  
Dog barks  
Puppy weeps
```

5. Develop a program to find the area of rectangle & circle using interfaces.

```
interface Shape {  
    void area();  
}
```

```
class Rectangle implements Shape {  
    int length = 5, breadth = 3;  
  
    public void area() {  
        System.out.println("Area of Rectangle: " + (length * breadth));  
    }  
}
```

```
class Circle implements Shape {  
    double radius = 4;  
  
    public void area() {  
        System.out.println("Area of Circle: " + (3.14 * radius * radius));  
    }  
}
```

```
public static void main(String[] args) {  
    Rectangle r = new Rectangle();  
    Circle c = new Circle();  
    r.area();  
    c.area();  
}  
}
```

```
Area of Rectangle: 15  
Area of Circle: 50.24
```

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6. Write a program to implement user defined packages in terms of creating a new package and importing the same.

Step 1: Create a file named mypack/MyClass.java:

```
package mypack;

public class MyClass {
    public void display() {
        System.out.println("Hello from user-defined package!");
    }
}
```

Step 2: Create a separate file in same level:

```
import mypack.MyClass;

public class TestPackage {
    public static void main(String[] args) {
        MyClass obj = new MyClass();
        obj.display();
    }
}
```

Compile commands:

```
Hello from user-defined package!
```

```
javac mypack/MyClass.java
javac -cp . TestPackage.java
java -cp . TestPackage
```

7. Write a program for implementation of try ,catch and finally block.

```
public class TryCatchFinally {
    public static void main(String[] args) {
        try {
            int a = 10 / 0;
        } catch (ArithmeticException e) {
            System.out.println("Error: Cannot divide by zero");
        }
    }
}
```

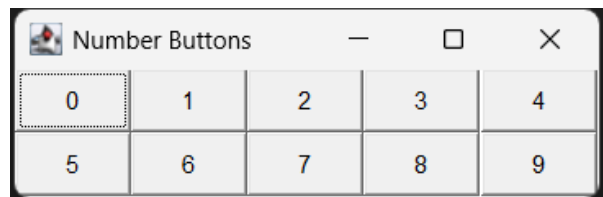
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```
    } finally {  
        System.out.println("Finally block executed");  
    }  
}  
}
```

Error: Cannot divide by zero
Finally block executed

8. Write a program to display the number on button from 0 to 9

```
import java.awt.*;  
import java.awt.event.*;  
  
public class NumberButtons extends Frame {  
    NumberButtons() {  
        setLayout(new GridLayout(2, 5));  
        for (int i = 0; i <= 9; i++) {  
            Button b = new Button("" + i);  
            add(b);  
        }  
  
        setSize(300, 100);  
        setTitle("Number Buttons");  
        setVisible(true);  
    }  
  
    public static void main(String[] args) {  
        new NumberButtons();  
    }  
}
```



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9. Write a program to generate KeyEvent when a key is pressed and display a “KeyPressed” message.

```
import java.awt.*;
import java.awt.event.*;

public class KeyEventExample extends Frame implements KeyListener {

    Label label;

    KeyEventExample() {
        label = new Label("Press any key...", Label.CENTER);
        label.setBounds(50, 100, 200, 30);

        setTitle("KeyEvent Example");
        setSize(300, 200);
        setLayout(null);
        setVisible(true);

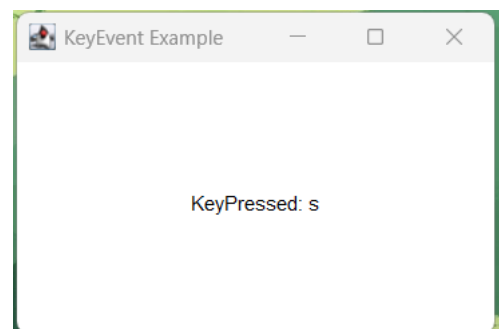
        addKeyListener(this);
        add(label);
        addWindowListener(new WindowAdapter() {
            public void windowClosing(WindowEvent e) {
                dispose();
            }
        });
    }

    public void keyTyped(KeyEvent e) {}

    public void keyPressed(KeyEvent e) {
        label.setText("KeyPressed: " + e.getKeyChar());
    }

    public void keyReleased(KeyEvent e) {}

    public static void main(String[] args) {
        new KeyEventExample();
    }
}
```



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10. Write a program using URL class to retrieve the host, protocol , port and file of the URL <http://www.msbte.org.in>.

```
import java.net.*;
```

```
public class URLInfo {  
    public static void main(String[] args) throws Exception {  
        URL url = new URL("http://www.msbte.org.in");  
  
        System.out.println("Protocol: " + url.getProtocol());  
        System.out.println("Host: " + url.getHost());  
        System.out.println("Port: " + url.getPort());  
        System.out.println("File: " + url.getFile());  
    }  
}
```

```
Protocol: http  
Host: www.msbte.org.in  
Port: -1  
File:
```