SRI RAMACHANDRA
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Category - I Deemed to be University) Porur, Chennai
SRI RAMACHANDRA ENGINEERING AND TECHNOLOGY

CSE 280 ADVANCE JAVA

STUDENT WORK BOOK

Name	**:**	S. Harshini
Unique ID	**:**	E0119002
Year	**:**	II
Quarter	**:**	Q6
Department	**:**	B.Tech CSE (AI &ML)
Faculty Name	**:**	Prof. Ashok Kumar
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Questions:

1. Write a program to solve quadratic equation

2.Find the LCM of two numbers

3. Find the HCF of two numbers

4.Find the sum of natural numbers in a given interval

5. Display the power series of a given number, eg: 2^0, 2^1, 2^2, 2^3, ... 2^n.

Program:

HTML:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>
<body>
    <p>Question 1: Solve Quadratic Equation</p>
    <form action="q1" method="GET">
        <input type="text" name="a" placeholder="Value of a" />
        <br>
        <input type="text" name="b" placeholder="Value of b" />
        <br>
        <input type="text" name="c" placeholder="Value of c" />
        <br>
        <button type="submit">Solve</button>
    </form>

    <p>Question 2: Find the LCM of two numbers</p>
    <form action="q2" method="get">
        <input type="text" name="num1" placeholder="Number 1"/>
```

```
        <br>
        <input type="text" name="num2" placeholder="Number 2"/>
        <br>
        <button type="submit">Find LCM</button>
    </form>

    <p>Question 3: Find the HCF of two numbers</p>
    <form action="q3" method="get">
        <input type="text" name="num1" placeholder="Number 1"/>
        <br>
        <input type="text" name="num2" placeholder="Number 2"/>
        <br>
        <button type="submit">Find HCF</button>
    </form>

    <p>Question 4: Find the sum of natural numbers</p>
    <form action="q4" method="get">
        <input type="text" name="ll" placeholder="Lower Limit"/>
        <br>
        <input type="text" name="ul" placeholder="Upper Limit"/>
        <br>
        <button type="submit">Find Sum</button>
    </form>

    <p>Question 2: Display series of power</p>
    <form action="q5" method="get">
        <input type="text" name="n" placeholder="Enter value"/>
        <br>
        <button type="submit">Display</button>
    </form>
</body>
</html>
```

SERVLETS:

```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
import java.sql.*;

public class q1 extends HttpServlet {

    public void init() throws ServletException {
    }
```

```
    public void doGet(HttpServletRequest request, HttpServletResponse response) t
hrows ServletException, IOException {

        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        int a = Integer.parseInt(request.getParameter("a"));
        int b = Integer.parseInt(request.getParameter("b"));
        int c = Integer.parseInt(request.getParameter("c"));
        double D = b*b - 4*a*c;
        double root1 = (-b + Math.sqrt(D))/(2*a);
        double root2 = (-b - Math.sqrt(D))/(2*a);
        out.println("<html><body>");
        out.println("<p>The roots are: "+root1+" , "+root2+" .</p>");
        out.println("</body></html>");
    }

    public void destroy() {

    }
}
```

```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
import java.sql.*;

public class q2 extends HttpServlet{
    public void init()throws ServletException{

    }

    public void doGet(HttpServletRequest request, HttpServletResponse response)th
rows ServletException, IOException{
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        out.print("<html><body");
        int num1 = Integer.parseInt(request.getParameter("num1"));
        int num2 = Integer.parseInt(request.getParameter("num2"));
        int lcm = (num1 > num2) ? num1 : num2;

        while(true) {
          if( lcm % num1 == 0 && lcm % num2 == 0 ) {
```

```
            out.println("<p>The LCM is: "+lcm+"</p>");
            break;
          }
          ++lcm;
        }
        out.print("</body></html>");
    }

    public void destroy(){

    }
}
```

```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
import java.sql.*;

public class q3 extends HttpServlet{
    public void init()throws ServletException{

    }

    public void doGet(HttpServletRequest request, HttpServletResponse response)th
rows ServletException, IOException{
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        out.println("<html><body>");
        out.print("<html><body");
        int num1 = Integer.parseInt(request.getParameter("num1"));
        int num2 = Integer.parseInt(request.getParameter("num2"));
        int hcf = num1 < num2 ? num1 : num2 ;
        for(int i = 1; i<=hcf; i++){
            if(num1%i == 0 && num2%i == 0){
                hcf = i;
                break;
            }
        }
        out.println("<p>The HCF is : "+hcf+"</p>");
        out.println("</body></html>");
    }

    public void destroy(){
```

```
    }
}
```

```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
import java.sql.*;

public class q4 extends HttpServlet{
    public void init()throws ServletException{

    }

    public void doGet(HttpServletRequest request, HttpServletResponse response)th
rows ServletException, IOException{
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        out.println("<html><body>");
        out.print("<html><body");
        int ll = Integer.parseInt(request.getParameter("ll"));
        int ul = Integer.parseInt(request.getParameter("ul"));
        int sum = 0;
        if(ll<ul){
            for(int i = ll; i<=ul; i++){
                sum += i;
            }
            out.println("<p>The sum is: "+sum+"</p>");
        }
        else{
            out.println("<p>Improper Inputs!</p>");
        }
        out.println("</body></html>");
    }

    public void destroy(){

    }
}
```

```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
import java.sql.*;
```

```
public class q5 extends HttpServlet{
    public void init()throws ServletException{

    }

    public void doGet(HttpServletRequest request, HttpServletResponse response)th
rows ServletException, IOException{
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        out.println("<html><body>");
        out.print("<html><body");
        int n = Integer.parseInt(request.getParameter("n"));
        int x = 0;
        out.println("<p>The series:</p>");
        for(int i = 0; i<=n; i++){
            x = (int)Math.pow(2,i);
            out.println("<p>"+x+"</p");
        }
        out.println("</body></html>");
    }

    public void destroy(){

    }
}
```

XML:

```
<?xml version="1.0" encoding="UTF-8"?>

<web-app>

<servlet>
<servlet-name>q1</servlet-name>
<servlet-class>q1</servlet-class>
</servlet>

<servlet-mapping>
<servlet-name>q1</servlet-name>
<url-pattern>/q1</url-pattern>
</servlet-mapping>

<servlet>
```

```
<servlet-name>q2</servlet-name>
<servlet-class>q2</servlet-class>
</servlet>

<servlet-mapping>
<servlet-name>q2</servlet-name>
<url-pattern>/q2</url-pattern>
</servlet-mapping>


  <servlet>
<servlet-name>q3</servlet-name>
<servlet-class>q3</servlet-class>
</servlet>

<servlet-mapping>
<servlet-name>q3</servlet-name>
<url-pattern>/q3</url-pattern>
</servlet-mapping>

<servlet>
<servlet-name>q4</servlet-name>
<servlet-class>q4</servlet-class>
</servlet>

<servlet-mapping>
<servlet-name>q4</servlet-name>
<url-pattern>/q4</url-pattern>
</servlet-mapping>

<servlet>
<servlet-name>q5</servlet-name>
<servlet-class>q5</servlet-class>
</servlet>

<servlet-mapping>
<servlet-name>q5</servlet-name>
<url-pattern>/q5</url-pattern>
</servlet-mapping>

</web-app>
```

Output:

Question 1: Solve Quadratic Equation

1
6
9
Solve

Question 2: Find the LCM of two numbers

4
6
Find LCM

Question 3: Find the HCF of two numbers

3
4
Find HCF

Question 4: Find the sum of natural numbers

5
30
Find Sum

Question 2: Display series of power

5
Display

The roots are: -3.0 , -3.0 .

The LCM is: 12

The HCF is : 1

The sum is: 455

The series:

1

2

4

8

16

32