

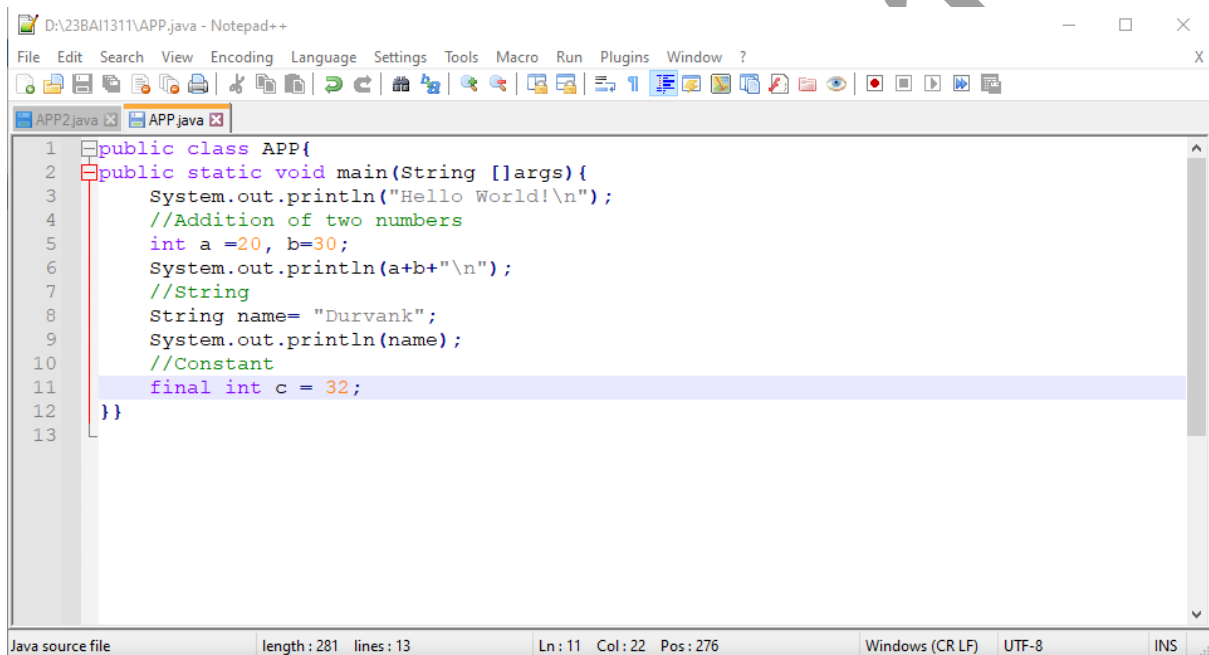
# 23BAI1311

## Durvank Mahesh Gade

### GitHub Repository:

[23BAI1311DurvankMaheshGade/23BAI1311\\_DurvankGadeJavaLab \(github.com\)](https://github.com/23BAI1311DurvankMaheshGade/23BAI1311_DurvankGadeJavaLab)

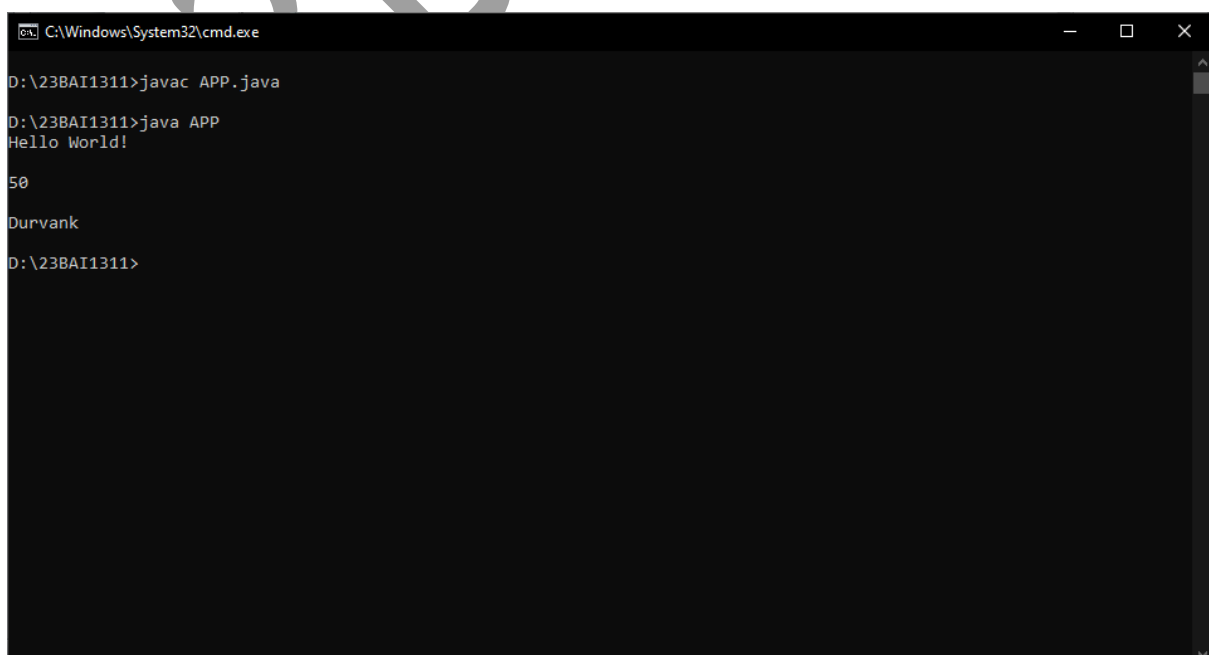
16/07/2024



The screenshot shows a Notepad++ window titled "D:\23BAI1311\APP.java - Notepad++". The menu bar includes File, Edit, Search, View, Encoding, Language, Settings, Tools, Macro, Run, Plugins, Window, and ?. The toolbar contains various icons for file operations and editing. The editor has two tabs: "APP2.java" and "APP.java", with "APP.java" being the active tab. The code in "APP.java" is as follows:

```
1 public class APP{
2     public static void main(String []args){
3         System.out.println("Hello World!\n");
4         //Addition of two numbers
5         int a =20, b=30;
6         System.out.println(a+b+"\n");
7         //String
8         String name= "Durvank";
9         System.out.println(name);
10        //Constant
11        final int c = 32;
12    }
13 }
```

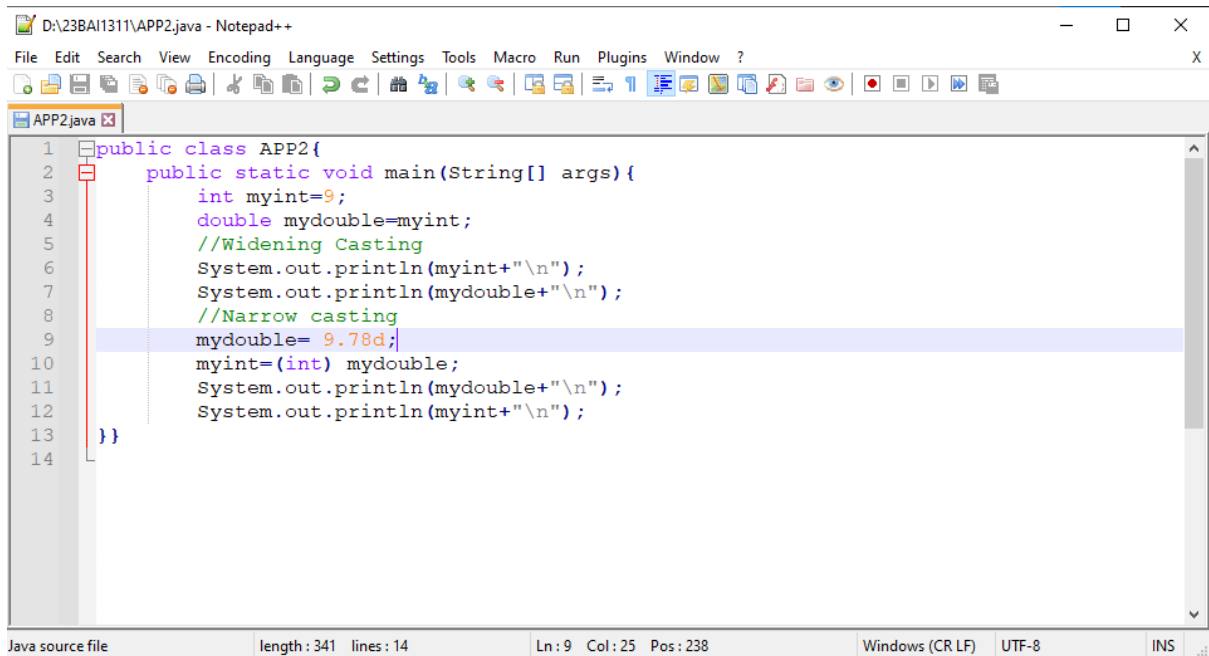
The status bar at the bottom indicates: "Java source file", "length: 281 lines: 13", "Ln: 11 Col: 22 Pos: 276", "Windows (CR LF)", "UTF-8", and "INS".



The screenshot shows a Windows command prompt window titled "C:\Windows\System32\cmd.exe". The prompt is at "D:\23BAI1311>". The user has entered the following commands and received the following output:

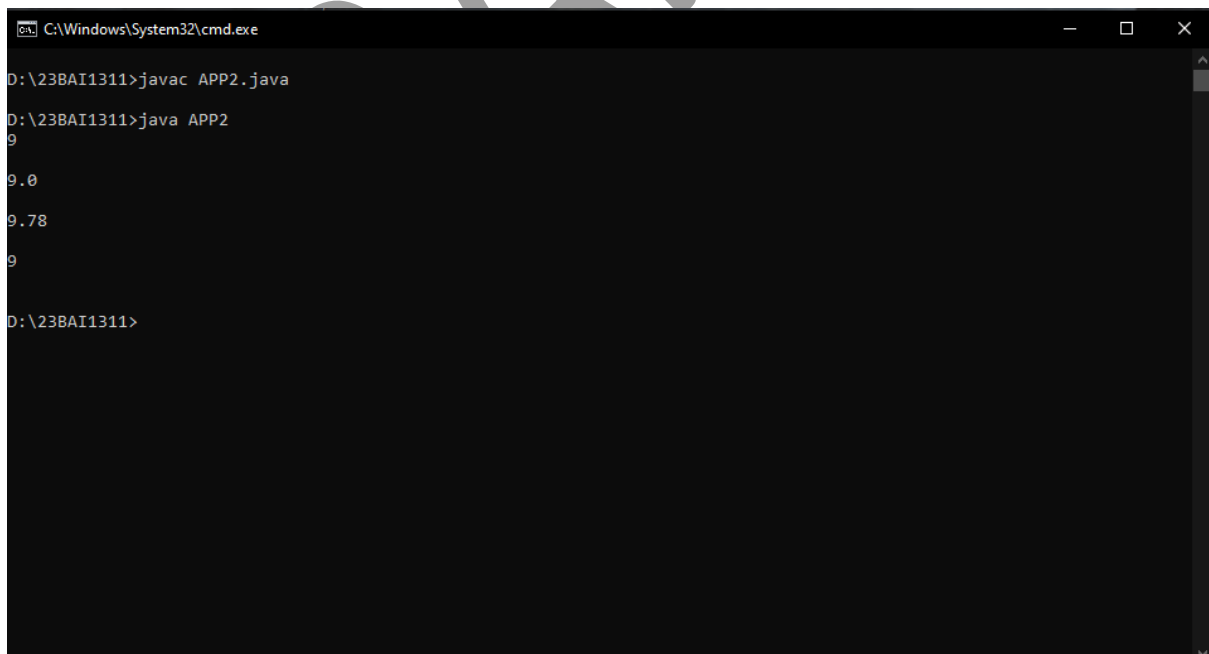
```
D:\23BAI1311>javac APP.java
D:\23BAI1311>java APP
Hello World!
50
Durvank
D:\23BAI1311>
```

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```
1 public class APP2{
2     public static void main(String[] args){
3         int myint=9;
4         double mydouble=myint;
5         //Widening Casting
6         System.out.println(myint+"\n");
7         System.out.println(mydouble+"\n");
8         //Narrow casting
9         mydouble= 9.78d;
10        myint=(int) mydouble;
11        System.out.println(mydouble+"\n");
12        System.out.println(myint+"\n");
13    }
14 }
```

Java source file    length: 341   lines: 14    Ln: 9   Col: 25   Pos: 238    Windows (CR LF)    UTF-8    INS

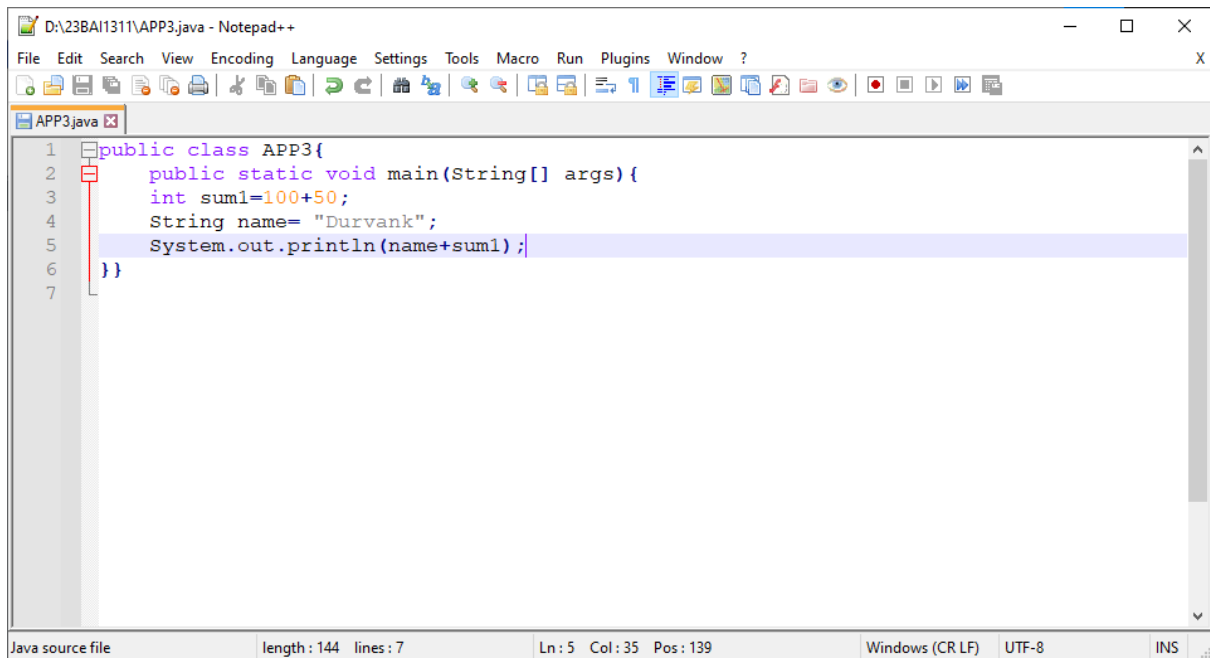


```
C:\Windows\System32\cmd.exe

D:\23BAI1311>javac APP2.java

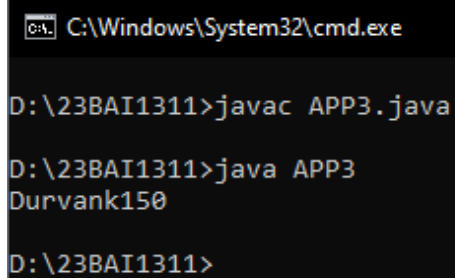
D:\23BAI1311>java APP2
9
9.0
9.78
9

D:\23BAI1311>
```



```
1 public class APP3{
2     public static void main(String[] args){
3         int sum1=100+50;
4         String name= "Durvank";
5         System.out.println(name+sum1);
6     }
7 }
```

Java source file    length: 144   lines: 7    Ln: 5   Col: 35   Pos: 139    Windows (CR LF)   UTF-8   INS



```
C:\Windows\System32\cmd.exe

D:\23BAI1311>javac APP3.java

D:\23BAI1311>java APP3
Durvank150

D:\23BAI1311>
```

D:\23BAI1311\APP4.java - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

APP4.java

```
1 public class APP4{
2     public static void main(String[] args){
3         int x,y;
4         x=20;
5         y=(x==1)?61:90;
6         System.out.println("Value of y is:" + y);
7         y=(x==20)?61:90;
8         System.out.println("Value of y is:" + y);
9     }
10 }
11
```

Java source file    length : 220   lines : 11    Ln : 1   Col : 18   Pos : 18    Windows (CR LF)   UTF-8   INS

C:\Windows\System32\cmd.exe

```
D:\23BAI1311>javac APP4.java
D:\23BAI1311>java APP4
Value of y is:90
Value of y is:61
D:\23BAI1311>
```

The image shows a Notepad++ window titled "D:\23BAI1311\APP5.java - Notepad++" with a menu bar (File, Edit, Search, View, Encoding, Language, Settings, Tools, Macro, Run, Plugins, Window, ?) and a toolbar. The editor contains the following Java code:

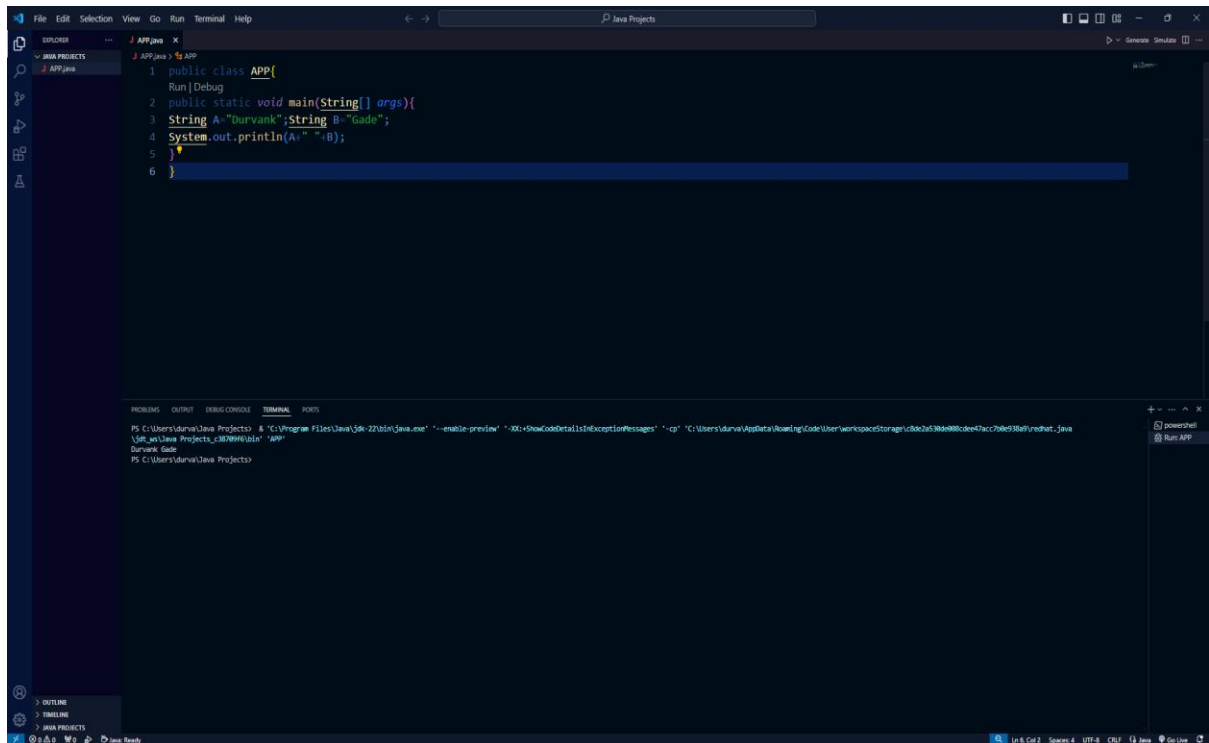
```
1 public class APP5{
2     public static void main(String[] args){
3         String name="Durvank";
4         System.out.println("Size of string is:"+ name.length());
5         System.out.println(name.toUpperCase());
6         System.out.println(name.toLowerCase());
7         System.out.println(name.indexOf("van"));
8     }
9 }
```

The status bar at the bottom of the Notepad++ window displays: "Java source file", "length : 284 lines : 9", "Ln : 7 Col : 49 Pos : 279", "Windows (CR LF)", "UTF-8", and "INS".

Below the Notepad++ window is a Windows command prompt window titled "C:\Windows\System32\cmd.exe". It shows the execution of the Java program:

```
D:\23BAI1311>javac APP5.java
D:\23BAI1311>java APP5
Size of string is:7
DURVANK
durvank
3
D:\23BAI1311>
```

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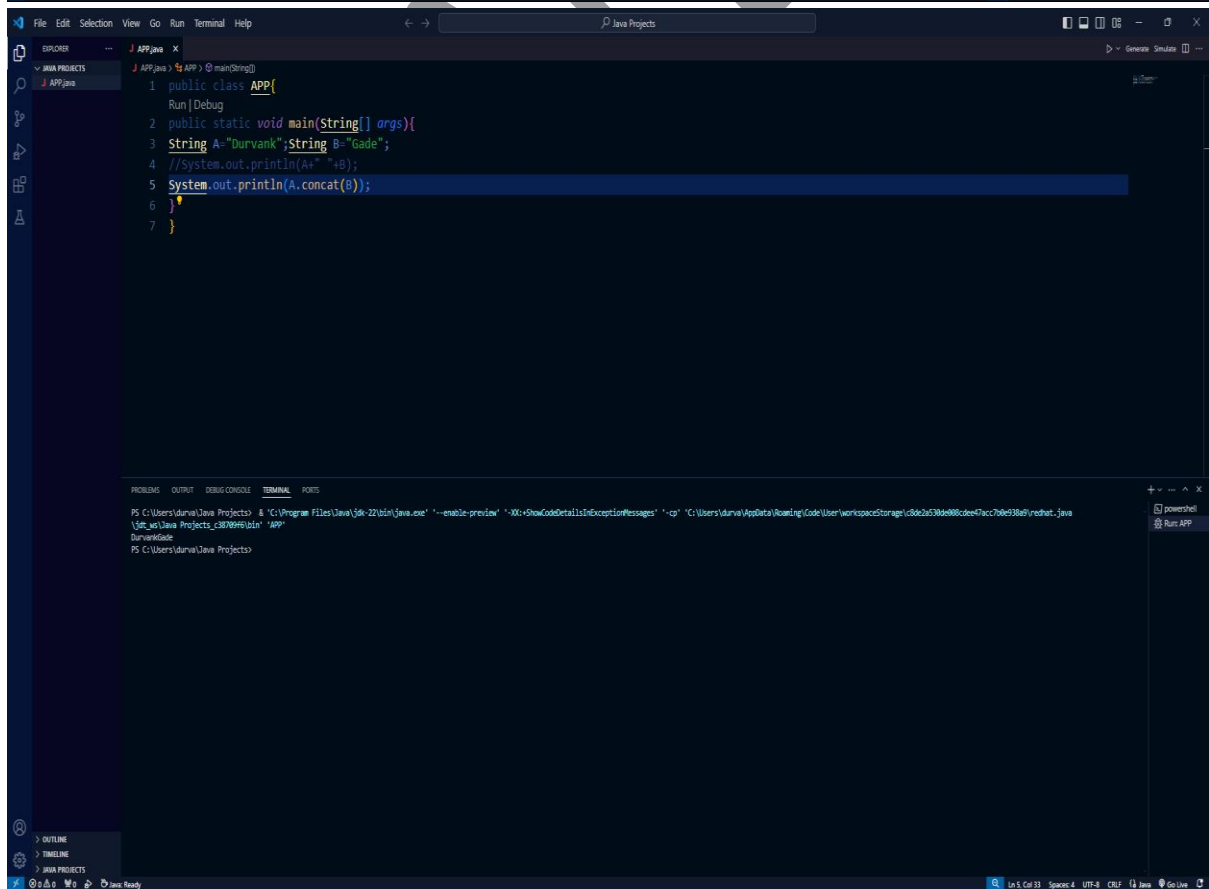
```
1 public class APP{
2     Run|Debug
3     public static void main(String[] args){
4         String A="Durvank";String B="Gade";
5         System.out.println(A+" "+B);
6     }
7 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

PS C:\Users\durva\Java Projects> & "C:\Program Files\Java\jdk-22\bin\java.exe" "-enable-preview" "-XX:-ShowCodeDetailsInExceptionMessages" "-cp" "C:\Users\durva\AppData\Local\Code\User\workspaceStorage\c86c365386a98cdee47acc7b6e93869\redhat\_java\lib\ms\_java\_projects\c86c365386a98cdee47acc7b6e93869\bin" "APP"

Durvank Gade

PS C:\Users\durva\Java Projects>



```
1 public class APP{
2     Run|Debug
3     public static void main(String[] args){
4         String A="Durvank";String B="Gade";
5         //System.out.println(A+" "+B);
6         System.out.println(A.concat(B));
7     }
8 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

PS C:\Users\durva\Java Projects> & "C:\Program Files\Java\jdk-22\bin\java.exe" "-enable-preview" "-XX:-ShowCodeDetailsInExceptionMessages" "-cp" "C:\Users\durva\AppData\Local\Code\User\workspaceStorage\c86c365386a98cdee47acc7b6e93869\redhat\_java\lib\ms\_java\_projects\c86c365386a98cdee47acc7b6e93869\bin" "APP"

DurvankGade

PS C:\Users\durva\Java Projects>

```
File Edit Selection View Go Run Terminal Help
Java Projects

EXPLORER
APP.java

APP.java
1 public class APP{
2 ~ public static void main(String[] args){
3 ~ /*String A="Durvank";String B="Gade";
4 System.out.println(A+ " "+B);
5 System.out.println(A.concat(B));
6 */
7 String x="10";
8 int y =20;
9 String z=x+y;
10 System.out.println(z);
11 ~}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

PS C:\Users\durva\Java Projects> & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\durva\AppData\Roaming\Code\User\workspaceStorage\c8de2a530de008cdee47acc7b0e938a9\redhat.java\jdk\_ws\Java Projects\_c38709f6\bin' 'APP'

1020

PS C:\Users\durva\Java Projects>

Ln 10, Col 23 Spaces: 4 UTF-8 CRLF Java Go Live

```
File Edit Selection View Go Run Terminal Help
Java Projects

EXPLORER
APP.java

APP.java
1 public class APP{
2 public static void main(String[] args){
5 System.out.println(A.concat(B));
6 */
7 /*String x='10';
8 int y =20;
9 String z=x+y;
10 System.out.println(z);*/
11 String txt="We are the so-called \"Vikings\" from the North.";
12 System.out.println(txt);
13 ~}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

PS C:\Users\durva\Java Projects> & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\durva\AppData\Roaming\Code\User\workspaceStorage\c8de2a530de008cdee47acc7b0e938a9\redhat.java\jdk\_ws\Java Projects\_c38709f6\bin' 'APP'

We are the so-called "Vikings" from the North.

PS C:\Users\durva\Java Projects>

Ln 11, Col 3 Spaces: 4 UTF-8 CRLF Java Go Live

```
1 public class APP2{  
    Run | Debug  
2 public static void main(String[] args){  
3     System.out.println(Math.max(a:5,b:10));  
4     System.out.println(Math.min(a:5,b:10));  
5     System.out.println(Math.sqrt(a:64));  
6     System.out.println(Math.abs(-4.7));  
7     System.out.println(Math.random());  
8 }
```

```
PS C:\Users\durva> & 'C:\Program Files\Java\jdk-22\bin\java.exe' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\durva\AppData\Local\Temp\vscodesws_6d  
ab0\jdt_ws\jdt.ls-java-project\bin' 'APP2'
```

10

5

8.0

4.7

0.6066473127902583

PS C:\Users\durva>



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Program 1:

```
23-07-24 > J APP.java > APP > main(String[])  
1 public class APP{  
    Run | Debug  
2     public static void main(String[] args){  
3         boolean isJavaFun=true;  
4         boolean isFishTasty=false;  
5         System.out.println(isJavaFun);  
6         System.out.println(isFishTasty);  
7     }  
8 }
```

Output:

```
PS D:\Docs\Material\3rd Sem\23BAI1311-JavaLab> & 'C:\va\AppData\Roaming\Code\User\workspaceStorage\b875497c  
true  
false  
PS D:\Docs\Material\3rd Sem\23BAI1311-JavaLab>
```

Program 2:

```
    }*/  
    int x=10; int y=9;  
    System.out.println(x>y);}
```

Output:

```
PS D:\Docs\Material\3rd Sem\23BAI1311-JavaLab> & 'C:\Program Files\Java\jdk-11.0.10\bin\java.exe' -Xmx1024m -Xms128m -Djava.awt.headless=true -Djava.class.path=C:\Users\durva\AppData\Roaming\Code\User\workspaceStorage\b87549...  
true  
PS D:\Docs\Material\3rd Sem\23BAI1311-JavaLab>
```

Program 3:

```
public class APP23070 {  
    Run | Debug  
    public static void main(String[] Args){  
        if(20>18){  
            System.out.println(x:"20m is greater than 18");  
        }  
    }  
}
```

Output:

```
PS D:\Docs\Material\3rd Sem\23BAI1311-JavaLab> & 'C:\Program Files\Java\jdk-11.0.10\bin\java.exe' -Xmx1024m -Xms128m -Djava.awt.headless=true -Djava.class.path=C:\Users\durva\AppData\Roaming\Code\User\workspaceStorage\b87549...  
20m is greater than 18  
PS D:\Docs\Material\3rd Sem\23BAI1311-JavaLab>
```

Program 4:

```
        System.out.println( 20 is greater than 18 );  
    }*/  
    int time =20;  
    if (time<18){System.out.println(x:"Good day");}  
    else{System.out.println(x:"Good Evening");}  
}  
}
```

Output:

```
PS D:\Docs\Material\3rd Sem\23BAI1311-JavaLab> & 'C:\Program Files  
p' 'C:\Users\durva\AppData\Roaming\Code\User\workspaceStorage\b87  
Good Evening  
PS D:\Docs\Material\3rd Sem\23BAI1311-JavaLab>
```

### Program 5:

```
1 public class APP2307b {
2     public static void main(String[] Args){
13
14         int day=4;
15         switch (day) {
16             case 1:
17                 System.out.println(x:"Monday");
18                 break;
19             case 2:
20                 System.out.println(x:"Tuesday");
21                 break;
22             case 3:
23                 System.out.println(x:"Wednesday");
24                 break;
25             case 4:
26                 System.out.println(x:"Thursday");
27                 break;
28             case 5:
29                 System.out.println(x:"Friday");
30                 break;
31             case 6:
32                 System.out.println(x:"Sat");
33                 break;
34             case 7:
35                 System.out.println(x:"Sunday");
36                 break;
37             default:
38                 System.out.println(x:"Invalid");
39                 break;
40         }
41     }
42 }
```

### Output:

```
Thursday
PS D:\Docs\Material\3rd Sem\23BAI1311-JavaLab>
```

Program 7:

```
1 public class APP2307c {  
    Run | Debug  
2     public static void main(String[] args){  
3         int i = 0;  
4         while(i<5){  
5             System.out.println(i);  
6             i++;  
7         }  
8     }  
9 }  
10
```

Output:

```
PS D:\Docs\Material\3rd Sem\23BA11311-JavaLab> java -cp .\AppData\Roaming\Code\User\workspaceStorage\b875497c60bbd44b80000000000000000\APP2307c\bin APP2307c  
0  
1  
2  
3  
4
```

Program 8:

```
10     int i=0;  
11     do{  
12         System.out.println(i);  
13         i++;  
14     }  
15     while(i<5);
```

Output:

```
PS D:\Docs\Material\3rd Sem\23BA11311-JavaLab> java -cp .\AppData\Roaming\Code\User\workspaceStorage\b875497c60bbd44b80000000000000000\APP2307c\bin APP2307c  
0  
1  
2  
3  
4
```

Program 9:

```
String[] Cars={"Audi","Maruti","BMW","McLauren"};
for(String i:Cars){
    System.out.println(i);
}
```

Output:

```
va\AppData\Roaming\Code\User\workspaceStor
Audi
Maruti
BMW
McLauren
```

Program 10:

```
1 public class APP2307c {
2     public static void main(String[] args){
20         String[] Cars={"Audi","Maruti","BMW","McLauren"};
21         for(String i:Cars){
22             System.out.println(i);
23         }
24         for(int i=0;i<10;i++){
25             if(i==4){
26                 break;
27             }
28             System.out.println(i);
29         }
30     }
31 }
```

Output:

```
0
1
2
3
```

Program 11:

```
1 public class APP2307c {
2     public static void main(String[] args){
29         System.out.println(1);
30     }
31     /*
32     for(int i=0;i<10;i++){
33         if(i==4){
34             continue;
35         }
36         System.out.println(i);
37     }
38 }
39 }
40 }
41 }
```

Output:

```
va\AppData\Roaming\Code\User\workspaceStorage\b875497c60
0
1
2
3
5
6
7
8
9
```

Program 12:

```
import java.util.Scanner;
public class APP2307d {
    Run | Debug
    public static void main(String[] args){
        Scanner myobj= new Scanner(System.in);
        String username;
        System.out.println(x:"Enter your username");
        username = myobj.nextLine();
        System.out.println("Username is: "+ username);
    }
}
```

Output:

```
Enter your username
Durvank
Username is: Durvank
PS D:\Docs\Material\3rd Sem\23BAT1311-JavaLab>
```

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Program 1:

```
1 public class APP2507{  
    Run | Debug  
2     public static void main(String[] args){  
3         char[] helloArray={'h','e','l','l','o','.'};  
4         String helloString=new String(helloArray);  
5         System.out.println(helloString);  
6     }  
7 }
```

Output:

```
va\AppData\Roaming\Code\User\workspaceStorage\b8  
hello.  
PS D:\Docs\Material\3rd Sem\23BAI1311-JavaLab>
```

Program 2:

```
1 import java.util.Scanner;  
2 public class Calculator{  
    Run | Debug  
3     public static void main(String[] args){  
4         int operandA, operandB; int i=0;  
5         String operation;  
6         String loop;  
7         String add="ADD";  
8         String sub="SUB";  
9         String mul="MULTIPLY";  
10        String div="DIVIDE";  
11        String cont="YES";  
12        String end="NO";  
13        Scanner n = new Scanner(System.in);  
14        while(i<=0){  
15            System.out.println(x:"Enter the arithmetic operation you need to perform:\n1.ADD\n2.SUB\n3.  
16            operation = n.nextLine();  
17            System.out.println(x:"Enter Operand 1");  
18            operandA = n.nextInt();  
19            System.out.println(x:"Enter Operand 2");  
20            operandB = n.nextInt();  
21            n.nextLine();  
22            if(operation.equals(add)){  
23                System.out.println(operandA+operandB);  
24            }  
}
```



```

5     else if(operation.equals(sub)){
6         System.out.println(operandA-operandB);
7     }
8     else if(operation.equals(mul)){
9         System.out.println(operandA*operandB);
10    }
11    else if(operation.equals(div)){
12        System.out.println(operandA/operandB);
13    }
14
15    System.out.println(x:"YES to continue or NO to exit: ");
16    loop = n.nextLine();
17    if(loop.equals(cont)){
18        continue;
19    }
20    else{
21        break;
22    }
23 }
24 }
25 }

```

Output:

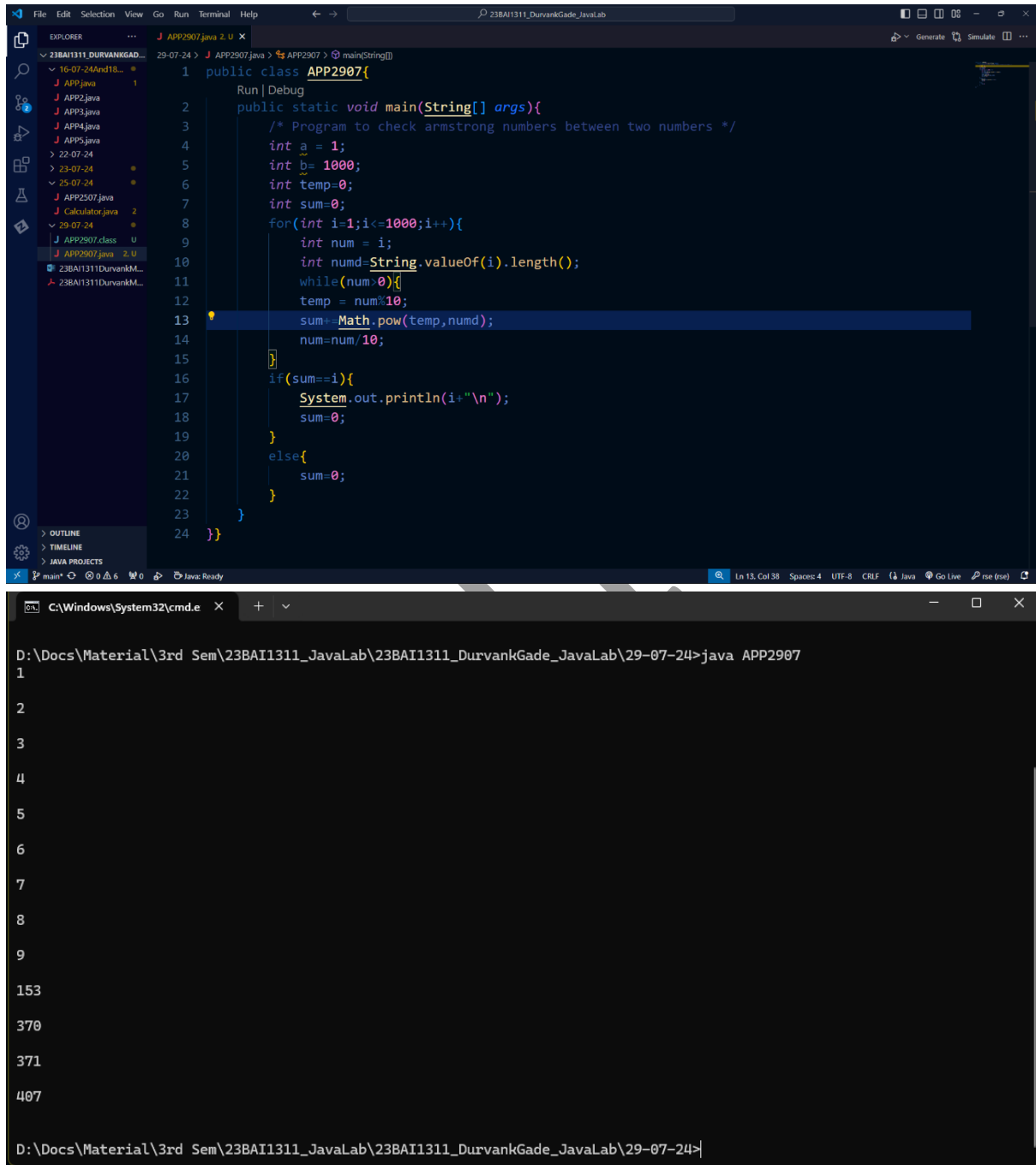
```

PS D:\Docs\Material\3rd Sem\23BAI1311-JavaLab> & 'C:\Program Files\Java\jdk-22\bin\java.exe' '--enable-preview'
va\AppData\Roaming\Code\User\workspaceStorage\b875497c60bbd44b86998893825b3943\redhat.java\jdt_ws\23BAI1311-Java
Enter the arithmetic operation you need to perform:
1.ADD
2.SUB
3.MULTIPLY
4.DIVIDE
ADD
Enter Operand 1
12
Enter Operand 2
13
25
YES to continue or NO to exit:
YES
Enter the arithmetic operation you need to perform:
1.ADD
2.SUB
3.MULTIPLY
4.DIVIDE
DIVIDE
Enter Operand 1
12
Enter Operand 2
2
6
YES to continue or NO to exit:
NO
PS D:\Docs\Material\3rd Sem\23BAI1311-JavaLab>

```

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## Program 1:



The image shows a screenshot of an IDE (IntelliJ IDEA) and a terminal window. The IDE displays a Java program named `APP2907` that checks for Armstrong numbers between two numbers `a` and `b`. The code is as follows:

```
1 public class APP2907{
2     public static void main(String[] args){
3         /* Program to check armstrong numbers between two numbers */
4         int a = 1;
5         int b= 1000;
6         int temp=0;
7         int sum=0;
8         for(int i=1;i<=1000;i++){
9             int num = i;
10            int numd=String.valueOf(i).length();
11            while(num>0){
12                temp = num%10;
13                sum+=Math.pow(temp,numd);
14                num=num/10;
15            }
16            if(sum==i){
17                System.out.println(i+"\n");
18                sum=0;
19            }
20            else{
21                sum=0;
22            }
23        }
24    }}
```

The terminal window shows the command `java APP2907` being executed, and the output displays the Armstrong numbers found: 1, 153, 370, 371, and 407.

## Program 2:

```
J: APP2907.java 1.0 U X Welcome to Z Open Editor
29-07-24 > J: APP2907b.java > APP2907b > main(String[])
1 import java.util.Scanner;
2
3 public class APP2907b {
4     Run | Debug
5     public static void main(String[] args){
6         Scanner sc = new Scanner(System.in);
7         System.out.print(s:"Enter the size of the square:");
8         int n = sc.nextInt();
9
10        for (int i = 0; i < n; i++) {
11            for (int j = 0; j < n; j++) {
12                if (i == 0 || i == n - 1 || j == 0 || j == n - 1) {
13                    System.out.print(s:"* ");
14                } else {
15                    System.out.print(s:" ");
16                }
17            }
18            System.out.println();
19        }
20
21    }
22 }
23 }
24 }
```

nMessages' '-cp' 'C:\Users\durva\AppData\Roaming\Code\User\workspaceStorage\f65921732f04d9ea3e21c058  
PP2907b'

Enter the size of the square:6

```
* * * * *
*       *
*       *
*       *
*       *
* * * * *
```

PS D:\Docs\Material\3rd Sem\23BAI1311\_JavaLab\23BAI1311\_DurvankGade\_JavaLab>

### Program 3:

```
import java.util.Scanner;
public class APP2907c{
    Run | Debug
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        System.out.println(x:"Enter the first number: ");
        int a = sc.nextInt();
        System.out.println(x:"Enter the second number: ");
        int b = sc.nextInt();
        int lcm = (a > b) ? a : b;
        while (true) {
            if (lcm % a == 0 && lcm % b == 0) {
                System.out.println("The LCM of " + a + " and " + b + " is " + lcm);
                break;
            }
            lcm++;
        }
    }
}
```

APP2907c

Enter the first number:

12

Enter the second number:

64

The LCM of 12 and 64 is 192

PS D:\Docs\Material\3rd Sem\23BAI1311\_JavaLab\23BAI1311\_DurvankGade\_JavaLab> |

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### Program 1:

```
1 public class APP3007{
    Run | Debug
2     public static void main(String[] args) {
3         StringBuffer sb=new StringBuffer(str:"Hello");
4         sb.append(str:"Java");
5         System.out.println(sb);
6     }
7 }
```

```
D:\23BAI1311\30-07-24>java APP3007
HelloJava
D:\23BAI1311\30-07-24>_
```

Program 2:

```
sb.replace(start:1,end:3,str:"Java");
System.out.println(sb);
```

```
D:\23BAI1311\30-07-24>javac APP3007.java
D:\23BAI1311\30-07-24>java APP3007
HJavallo
```

Program 3:

```
StringBuffer sb=new StringBuffer(str:"Hello");
sb.delete(start:1, end:3);
System.out.println(sb);
```

Output:

```
D:\23BAI1311\30-07-24>javac APP3007.java
D:\23BAI1311\30-07-24>java APP3007
Hlo
```

#### Program 4:

```
StringBuffer sb=new StringBuffer(str:"Hello");
sb.reverse();
System.err.println(sb);|
```

#### Output:

```
D:\23BAI1311\30-07-24>java APP3007
olleH
D:\23BAI1311\30-07-24>_
```

#### Program 5:

```
public class APP3007b {
    Run | Debug
    public static void main(String[] args) {
        StringBuffer sb=new StringBuffer();
        System.out.println(sb.capacity());
        sb.append(str:"Hello");
        System.out.println(sb.capacity());
        sb.append(str:" Java is my favorite language");
        System.out.println(sb.capacity());
    }
}
```

#### Output:

```
D:\23BAI1311\30-07-24>java APP3007b
16
16
34
```

## Program 6:

```
public class APP3007b {  
    Run | Debug  
    public static void main(String[] args) {  
        StringBuffer sb=new StringBuffer();  
        System.out.println(sb.capacity());  
        sb.append(str:"Hello");  
        System.out.println(sb.capacity());  
        sb.append(str:" Java is my favorite language");  
        System.out.println(sb.capacity());  
        sb.ensureCapacity(minimumCapacity:10);  
        System.out.println(sb.capacity());  
        sb.ensureCapacity(minimumCapacity:50);  
        System.out.println(sb.capacity());  
    }  
}
```

## Output:

```
D:\23BAI1311\30-07-24>javac APP3007b.java  
D:\23BAI1311\30-07-24>java APP3007b  
16  
16  
34  
34  
70
```

## Program 7:

```

public class APP3007c {
    Run | Debug
    public static void main(String[] args) {
        StringBuilder sb=new StringBuilder(str:"Hello");
        sb.append(str:"Java");
        System.out.println(sb);
    }
}

```

Output:

```

C:\Windows\System32\cmd.exe

D:\23BAI1311\30-07-24>javac APP3007c.java

D:\23BAI1311\30-07-24>java APP3007c
HelloJava

D:\23BAI1311\30-07-24>_

```

Program 8:

```

StringBuilder sb=new StringBuilder(str:"Hello");
sb.replace(start:1,end:3,str:"Java");
System.out.println(sb);

```

Output:

```

D:\23BAI1311\30-07-24>javac APP3007c.java

D:\23BAI1311\30-07-24>java APP3007c
HJavallo

```

Program 9:



```
StringBuilder sb=new StringBuilder(str:"Hello");  
sb.delete(start:1, end:3);  
System.out.println(sb);
```

Output:

```
D:\23BAI1311\30-07-24>javac APP3007c.java  
D:\23BAI1311\30-07-24>java APP3007c  
Hlo  
D:\23BAI1311\30-07-24>_
```

Program 10:

```
StringBuilder sb=new StringBuilder(str:"Hello");  
sb.reverse();  
System.err.println(sb);
```

Output:

```
D:\23BAI1311\30-07-24>javac APP3007c.java  
D:\23BAI1311\30-07-24>java APP3007c  
olleH
```

Program 11:

```
StringBuilder sb=new StringBuilder();
System.out.println(sb.capacity());
sb.append(str:"Hello");
System.out.println(sb.capacity());
sb.append(str:" Java is my favorite language");
System.out.println(sb.capacity());
sb.ensureCapacity(minimumCapacity:10);
System.out.println(sb.capacity());
sb.ensureCapacity(minimumCapacity:50);
System.out.println(sb.capacity());
```

Output:

```
D:\23BAI1311\30-07-24>javac APP3007c.java
D:\23BAI1311\30-07-24>java APP3007c
16
16
34
34
70
D:\23BAI1311\30-07-24>_
```

Program 12:

```

1  import java.util.Scanner;
2  public class APP3007d {
    Run | Debug
3  public static void main(String[] args) {
4      int temp=0;int temp2;
5      Scanner myobj=new Scanner(System.in);
6      System.out.println(x:"Enter number of elements in array:");
7      int n= myobj.nextInt();
8      int[] arr=new int[n];
9      for (int k=0;k<n;k++){
10         arr[k]=myobj.nextInt();
11     }
12
13
14     for (int i=0;i<arr.length;i++){
15         for (int j=i+1;j<arr.length;j++){
16             if(arr[i]<arr[j]){
17                 temp=arr[i];
18                 arr[i]=arr[j];
19                 arr[j]=temp;
20             }
21             else{
22                 continue;
23             }
24         }
25     }
26     System.out.println(arr[2]);
27 }
28 }
29

```

Output:

```

D:\23BAI1311\30-07-24>javac APP3007d.java
D:\23BAI1311\30-07-24>java APP3007d
Enter number of elements in array:
5
12
13
14
15
16
14

```

1/08/2024

## Program 1:

```
1  import java.util.StringTokenizer;
2  public class APP108{
    Run | Debug
3  public static void main(String[] args) {
4      StringTokenizer st=new StringTokenizer(str:"My name is Durvank",delim:" ");
5      while(st.hasMoreTokens()){
6          System.out.println(st.nextToken());
7      }
8  }}
```

## Output:

```
D:\23BAI1311\1-08-24>javac APP108.java
D:\23BAI1311\1-08-24>java APP108
My
name
is
Durvank
```

## Program 2:

```
import java.util.*;
public class APP108b {
    Run | Debug
    public static void main(String[] args) {
        StringTokenizer st=new StringTokenizer(str:"My name,is,Durvank,");
        System.out.println("next token is:" + st.nextToken(delim:","));
    }
}
```

## Output:

```
D:\23BAI1311\1-08-24>java APP108b
next token is:My name
```

### Program 3:

```
StringTokenizer st=new StringTokenizer(str:"My name is Durvank. I am a Second year student pursuing B.Tech in AI ML at VIT Chennai. ",delim:" ");
while(st.hasMoreTokens()){
    System.out.println(st.nextToken());
}
```

### Output:

```
D:\23BAI1311\1-08-24>java APP108
My
name
is
Durvank.
I
am
a
Second
year
student
pursuing
B.Tech
in
AI
ML
at
VIT
Chennai.
```

### Program 4:

```
StringTokenizer st=new StringTokenizer(str:"My name is Durvank",delim:" ");
while(st.hasMoreElements()){
    System.out.println(st.nextToken());
}
```

### Output:

```
D:\23BAI1311\1-08-24>java APP108
My
name
is
Durvank
```

## Program 5:

```
StringTokenizer st=new StringTokenizer(str:"My name is Durvank",delim:" ");
while(st.hasMoreTokens()){
    System.out.println(st.nextElement());
```

## Output:

```
D:\23BAI1311\1-08-24>java APP108
My
name
is
Durvank
```

## Program 6:

```
StringTokenizer st=new StringTokenizer(str:"My name is Durvank",delim:" ");
System.out.println("Total number of tokens: "+st.countTokens());
```

## Output:

```
D:\23BAI1311\1-08-24>java APP108
Total number of tokens: 4
```

## Program 7:

```
import java.util.*;
public class APP108c {
    Run | Debug
    public static void main(String[] args) {
        int[] arr;
        arr = new int[5];
        arr[0]=10;
        arr[1]=20;
        arr[2]=30;
        arr[3]=40;
        arr[4]=50;
        for(int i=0;i<arr.length;i++){
            System.out.println("Elements at index "+ i + ": " +arr[i]);
        }
    }
}
```

Output:

```
D:\23BAI1311\1-08-24>javac APP108c.java

D:\23BAI1311\1-08-24>java APP108c
Elements at index 0: 10
Elements at index 1: 20
Elements at index 2: 30
Elements at index 3: 40
Elements at index 4: 50
```

Program 8:

```
class Student {
2 public int roll_no;
3 public String Name;
4 Student(int roll_no,String Name){
5     this.roll_no=roll_no;
6     this.Name=Name;
7 }
8 }
9 }
10 public class APP108d{
11     Run | Debug
12     public static void main(String[] args) {
13         Student arr[];
14         arr=new Student[5];
15         arr[0]=new Student(roll_no:1,Name:"Aman");
16         arr[1]=new Student(roll_no:2,Name:"Nimish");
17         arr[2]=new Student(roll_no:3,Name:"Dinsha");
18         arr[3]=new Student(roll_no:4,Name:"Rajat");
19         arr[4]=new Student(roll_no:5,Name:"Durvank");
20
21         for(int i=0; i<arr.length;i++){
22             System.out.println("Roll number: " + arr[i].roll_no + " Name " + arr[i].Name);
23         }
24     }
25 }
```

Output:

```
D:\23BAI1311\1-08-24>javac APP108d.java

D:\23BAI1311\1-08-24>java APP108d
Roll number: 1 Name Aman
Roll number: 2 Name Nimish
Roll number: 3 Name Dinsha
Roll number: 4 Name Rajat
Roll number: 5 Name Durvank
```