

Q1. Explain Array in java programming?

Ans:

If we want to store multiple value under single variable name then we

Should go for array

An Array in java is store multiple vales(same types) in a single variable with continuous memory allocation.

Elements of the array access or assigned by index

Index always start with 0.

Java Does not support negative index

Arrays are fixed in size after declaring the array wen cannot increase or decrease the size of array

In java Array is dynamic

Element of the array can be access sequentially and randomly

How to declare array in java

Data type ArrayName[]=new Data type[**size**];

Size should not be negative or float/double

OR

Data type []ArrayName=new Data type[**size**];

OR

Data type[] ArrayName=new Data type[**size**];

Example:

```
int x[]=new int[-2];//invalid
```

```
int arr[]=new int [1];//valid
```

```
int num[]=new int[5/2];//valid
```

```
int num[]=new int[5.0/2];//invalid
```

```
String names[]=new String [10];//valid
```

```
float per[]=new floa[10];//valid
```

```
char Grade[] =new char [10];//valid
```

```
int ages[]=new int['A'];//valid
```

```
int ages[]=new int["A"];//valid
```

```
int ages[]=new int[0];//valid
```

```
class A1{  
    public static void main(String args[]){  
        int arr[]=new int[0];  
        arr[0]=10;  
    }  
}
```

```
C:\Users\Admin\Desktop\Java Task>java A1  
Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException  
Exception: 0  
    at A1.main(A1.java:4)  
  
C:\Users\Admin\Desktop\Java Task>
```



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```
class A1{  
    public static void main(String args[]){  
        int arr[]=new int[-1];  
        arr[0]=10;  
    }  
}
```

Command Prompt

```
Exception: 0  
    at A1.main(A1.java:4)  
  
C:\Users\Admin\Desktop\Java Task>javac A1.java  
  
C:\Users\Admin\Desktop\Java Task>java A1  
Exception in thread "main" java.lang.NegativeArraySizeExce  
ption  
    at A1.main(A1.java:3)  
  
C:\Users\Admin\Desktop\Java Task>
```



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```
class A1{  
    public static void main(String args[]){  
        int arr[]=new int[(int)2.5];  
        arr[0]=10;  
    }  
}
```

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```
class A1{  
    public static void main(String args[]){  
        int arr[]=new int[2.5];  
        arr[0]=10;  
    }  
}
```

Command Prompt

```
C:\Users\Admin\Desktop\Java Task>javac A1.java  
A1.java:3: error: incompatible types: possible lossy conversion from double to int  
        int arr[]=new int[2.5];  
                        ^  
1 error  
  
C:\Users\Admin\Desktop\Java Task>
```



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```
class A1{  
    public static void main(String args[]){  
        int arr[]=new int[true];  
        arr[0]=10;  
    }  
}
```

```
C:\Users\Admin\Desktop\Java Task>javac A1.java  
A1.java:3: error: incompatible types: boolean cannot be co  
nverted to int  
        int arr[]=new int[true];  
                        ^  
1 error  
  
C:\Users\Admin\Desktop\Java Task>_
```



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```
class A1{  
    public static void main(String args[]){  
        int rollno[]=new int[5];  
  
    }  
}
```

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Windows (CRLF)

UTF-8



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```
class A1{  
    public static void main(String args[]){  
        int rollno[]=new int[5];  
  
    }  
}
```

```
C:\Users\Admin\Desktop\Java Task>java A1
```

```
C:\Users\Admin\Desktop\Java Task>_
```



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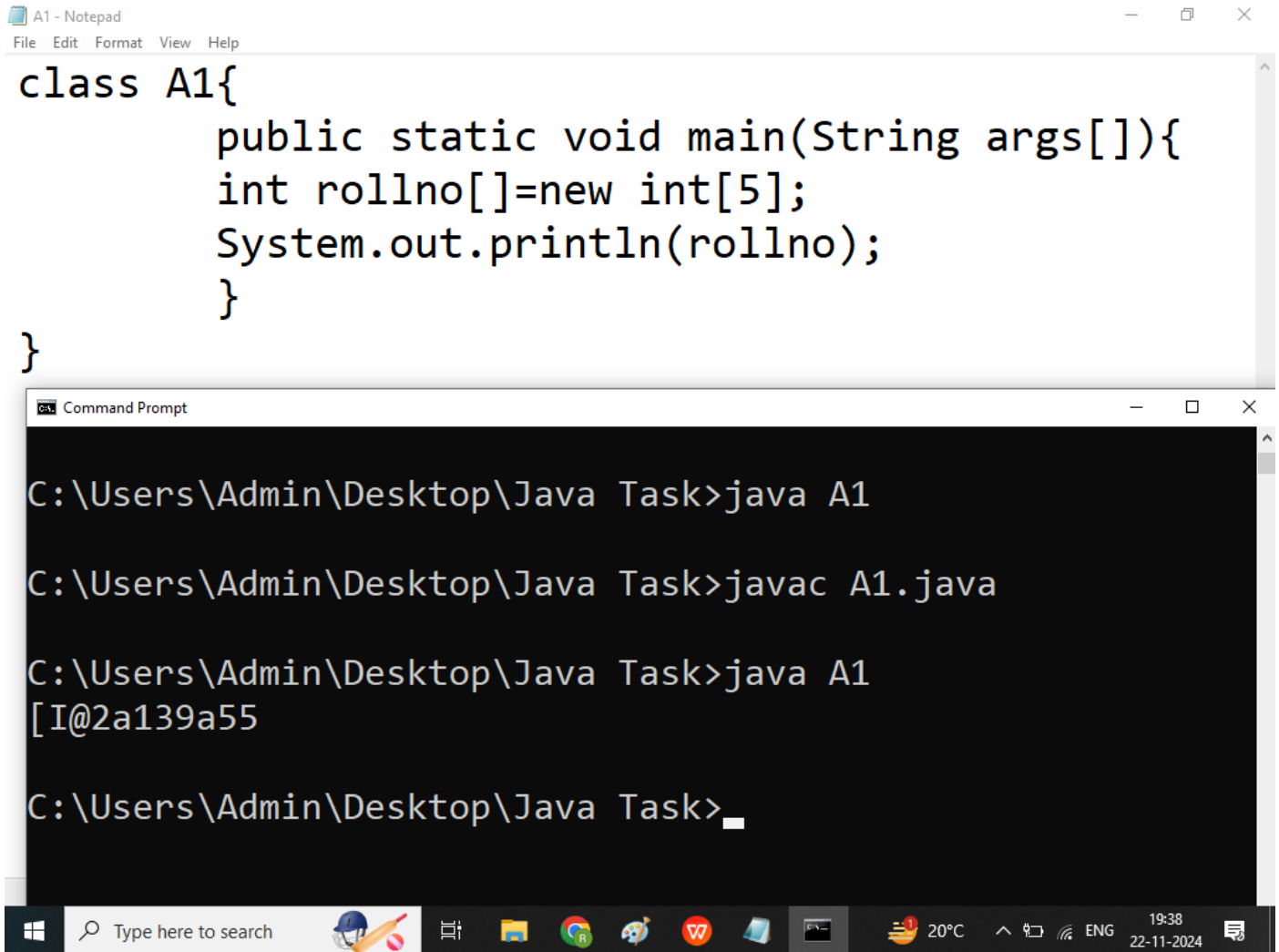


ENG

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The screenshot displays a Windows desktop environment. At the top, a Notepad window titled 'A1 - Notepad' contains the following Java code:

```
class A1{  
    public static void main(String args[]){  
        int rollno[]=new int[5];  
        System.out.println(rollno);  
    }  
}
```

Below the Notepad window, a Command Prompt window titled 'Command Prompt' shows the following commands and their outputs:

```
C:\Users\Admin\Desktop\Java Task>java A1  
  
C:\Users\Admin\Desktop\Java Task>javac A1.java  
  
C:\Users\Admin\Desktop\Java Task>java A1  
[I@2a139a55  
  
C:\Users\Admin\Desktop\Java Task>_
```

The Windows taskbar at the bottom includes the Start button, a search bar, and several application icons. The system tray on the right shows the temperature (20°C), network status, and the date and time (19:38, 22-11-2024).

`int rollno[]=new int[5];`

OR

`int []rollno=new int[5];`

OR

`Int[] rollno=new int[5];`

	rollno		(heap)		
	0	0	0	0	0
	0	1	2	3	4
	1000	1004	1008	1012	1016

How to print value of the array

`System.out.println(arrayName[index]);`

A1 - Notepad
File Edit Format View Help

```

class A1{
    public static void main(String args[]){
        int rollno[]=new int[5];
        System.out.println(rollno[6]);
    }
}

```

Command Prompt

```

[I@2a139a55
C:\Users\Admin\Desktop\Java Task>javac A1.java
C:\Users\Admin\Desktop\Java Task>java A1
Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException
Exception: 6
    at A1.main(A1.java:4)
C:\Users\Admin\Desktop\Java Task>

```

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```
class A1{  
    public static void main(String args[]){  
        int rollno[]=new int[5];  
        System.out.println(rollno[-1]);  
    }  
}
```

Command Prompt

```
C:\Users\Admin\Desktop\Java Task>javac A1.java
```

```
C:\Users\Admin\Desktop\Java Task>java A1
```

```
Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException  
Exception: -1  
    at A1.main(A1.java:4)
```

```
C:\Users\Admin\Desktop\Java Task>_
```



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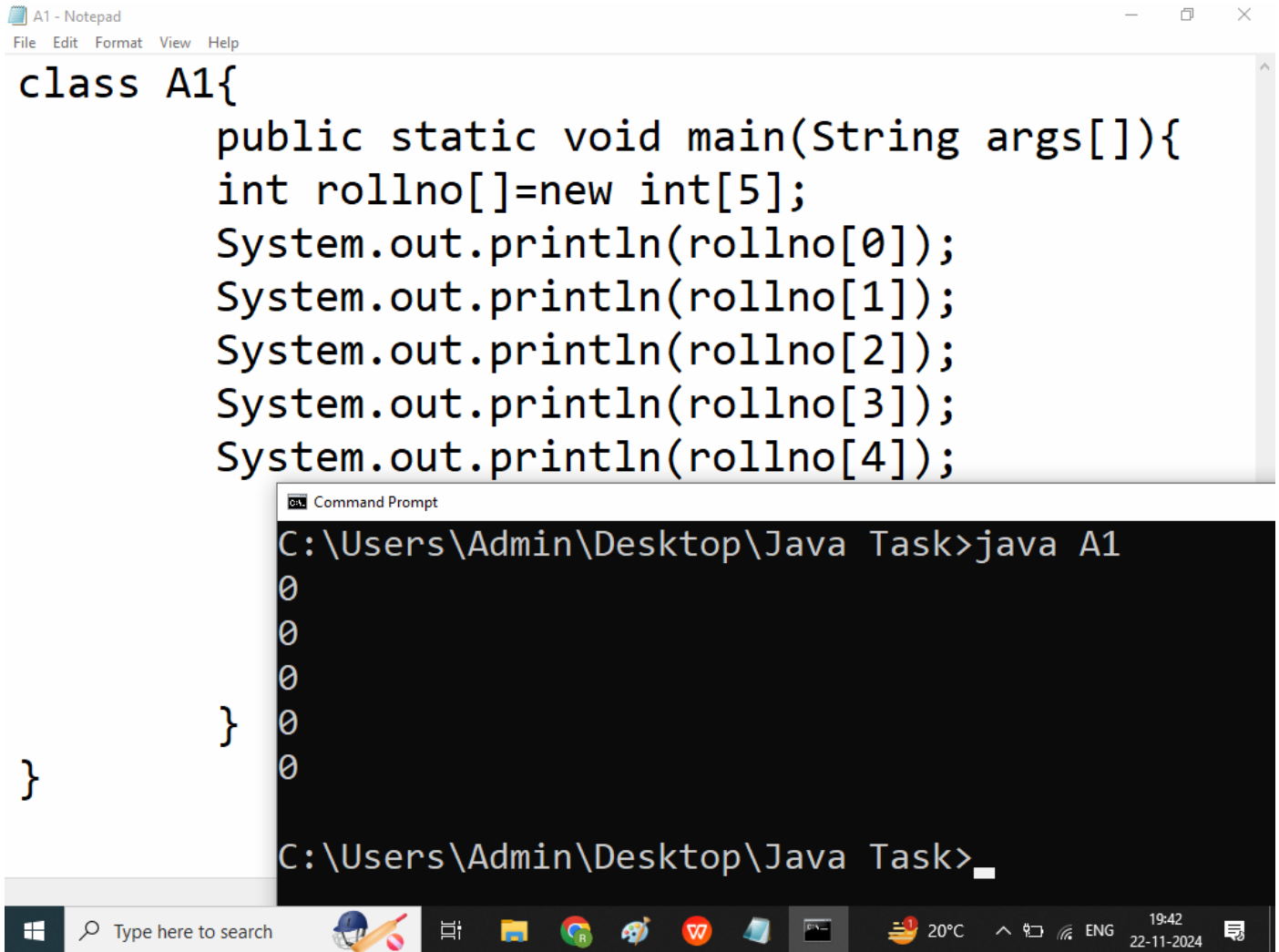


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```
class A1{
    public static void main(String args[]){
        int rollno[]=new int[5];
        System.out.println(rollno[0]);
        System.out.println(rollno[1]);
        System.out.println(rollno[2]);
        System.out.println(rollno[3]);
        System.out.println(rollno[4]);
    }
}
```

```
C:\Users\Admin\Desktop\Java Task>java A1
0
0
0
0
0

C:\Users\Admin\Desktop\Java Task>
```

How to Initialize array in java?

1. Initializing array using index

ArraName[index]=value;

rollno[0]=101;

rollno[1]=102;

rollno[2]=156;

rollno[3]=564;

rollno[4]=888;

```
class A1{
    public static void main(String args[]){
        int rollno[]=new int[5];
        rollno[0]=0101;
        rollno[1]=102;
        rollno[2]=156;
        rollno[3]=564;
        rollno[4]=888;
    }
}
```

```
System.out.println(rollno[0]);  
System.out.println(rollno[1]);  
System.out.println(rollno[2]);  
System.out.println(rollno[3]);  
System.out.println(rollno[4]);
```

```
}
```

```
}
```
