

How to take input from users???

After knowing arrays in java, let's move towards how take inputs from scanner class in Java.



To import scanner class all you have to do is:

- 1) Import `java.util.Scanner`; //Add this line at top of the code.
- 2) Create object of Scanner class by saying :
`Scanner scan = new Scanner(System.in);`
- 3) To read different types of input, look at the table below:

Method	Description
<code>nextBoolean()</code>	Reads a Boolean value from the user.
<code>nextByte()</code>	Reads a Byte value from the user.
<code>nextDouble()</code>	Reads a Double value from the user.
<code>nextFloat()</code>	Reads a Float value from the user.
<code>nextInt()</code>	Reads a Integer value from the user.
<code>nextLine()</code>	Reads a Line value from the user.
<code>nextLong()</code>	Reads a Long value from the user.
<code>nextShort()</code>	Reads a Short value from the user.

Continuation with arrays....

Now that you know why we go for array approach and what are different types of arrays, let's start with how to make use of it.

Example 1: Create an array to store the ages of 5 students

Solution:

```
import java.util.Scanner;

class Demo
{
    public static void main(String[] args)
    {
        int a[] = new int[5];

        Scanner scan = new Scanner(System.in);

        System.out.println("Enter the age:");
        a[0] = scan.nextInt();

        System.out.println("Enter the age:");
        a[1] = scan.nextInt();

        System.out.println("Enter the age:");
        a[2] = scan.nextInt();

        System.out.println("Enter the age:");
        a[3] = scan.nextInt();

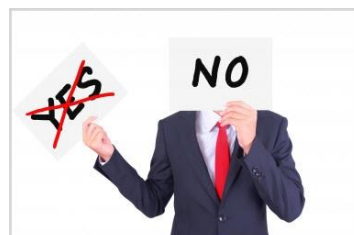
        System.out.println("Enter the age:");
        a[4] = scan.nextInt();

        System.out.println("Enter the age:");
        a[5] = scan.nextInt();

    }
}
```



IS IT
CORRECT?



Whenever a set of instructions is repeating it's wise to use loops.

Let's see how to make the code efficient with the help of for loop.



```
import java.util.Scanner;

class Demo
{
    public static void main(String[] args)
    {
        int a[] = new int[5];

        Scanner scan = new Scanner(System.in);

        for(int i =0; i<=4; i++)
        {
            System.out.println("Enter the age:");

            a[i] = scan.nextInt();

        }
    }
}
```



But instead of specifying array size in the for loop condition part we can make use of a built-in property called as length. Which will give the length of the array by saying **a.length-1 (-1 because the array indexing starts from 0).**

Let's see how length works for 2D, 3D array

Consider we have a 2D array,

```
int a[][] = new int[2][5];
```

	0	1	2	3	4
0	0	0	0	0	0
1	0	0	0	0	0

a.length → Number of rows

a[0].length → Number of elements in a[0]

a[1].length → Number of elements in a[1]

a[i].length → Number of columns

Let's now consider 3D array,

```
int a[][][] = new int [2][3][5];
```

a.length → Number of blocks

a[i].length → Number of rows

a[i][j].length → Number of Columns

		0	1	2	3	4
0	0	0	0	0	0	0
1	0	0	0	0	0	0
2	0	0	0	0	0	0

		0	1	2	3	4
0	0	0	0	0	0	0
1	0	0	0	0	0	0
2	0	0	0	0	0	0

Let us now try to code a 2D array

```
import java.util.Scanner;

class Demo
{
    public static void main(String[] args)
    {
        int a[][] = new int[2][5];

        Scanner scan = new Scanner(System.in);

        for(int i =0; i<=a.length-1; i++)
        {
            for(int j=0; j<=a[i].length-1; j++)
            {
                System.out.println("Enter the age of class "+ i
                +"student"+ j );

                a[i][j] = scan.nextInt();
            }
        }
    }
}
```

