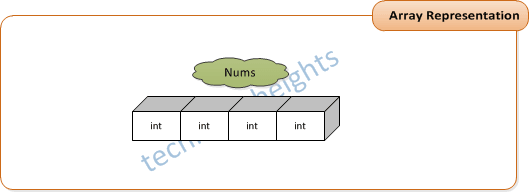
**Array Introduction**

* A variable which can hold multiple values of similar data type.
* Each element is differentiated by a number called index number.
* Index number starts with 0.
* Use new keyword to create an array.
* Or Array is the collection of homogeneous(same ) type values .
* Array take sequential memory allocation.



**Syntax :**

[view plaincopy to clipboardprint?](http://www.tkhts.com/core-java/array/array-introduction.jsp)

1. datatype []variable=new datatype[size];

**Types of arrays**

Arrays can be of two types

1. Single Dimensional Array(1-D)
2. Multi Dimensional Array(2-D)

**1. Single Dimensional Array**

* An array having only one row and multiple columns.
* Every array provides length property.

[view plaincopy to clipboardprint?](http://www.tkhts.com/core-java/array/array-introduction.jsp)

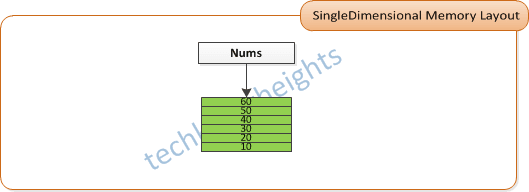
1. int []num=new int[6];

**Array Initialization**

[view plaincopy to clipboardprint?](http://www.tkhts.com/core-java/array/array-introduction.jsp)

1. int num[]={60,50,40,30,20,10};

* We can create an array of user defined size.
* Use length property to know the size of array.



**Example**

**WAP to ask the user for the size. Create an array of that size, input the data into the array and show the sum and average of all those numbers.**

[view plaincopy to clipboardprint?](http://www.tkhts.com/core-java/array/array-introduction.jsp)

1. import static java.lang.System.\*;
2. import java.util.Scanner;
3. public class ArrayTest
4. {
5. public static void main(String args[])
6. {
7. Scanner sc=new Scanner(in);
8. out.print("Enter the size : ");
9. int size=sc.nextInt();
11. int []ar=new int[size];
12. for(int i=0;i<ar.length;i++)
13. {
14. out.printf("Enter data %d : ",i+1);
15. ar[i]=sc.nextInt();
16. }
18. int sum=0;
19. for(int i=0;i<ar.length;i++)
20. sum=sum+ar[i];
22. float avg=(float)sum/ar.length;
23. out.println("Sum is "+sum+"
24. and average is "+avg);
25. }
26. }

**Output**

Enter the size : 3

Enter data 1 : 3

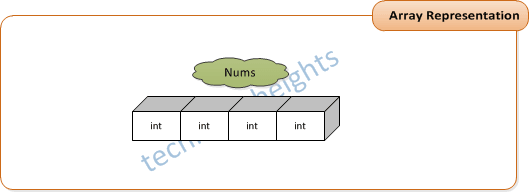
Enter data 2 : 3

Enter data 3 : 3

Sum is 9 and average is 3.0

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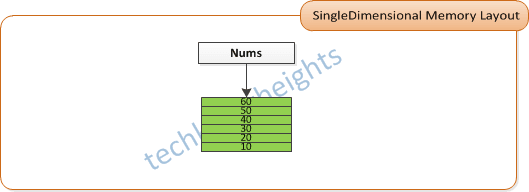
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13. {
14. out.printf("Enter data %d : ",i+1);
15. ar[i]=sc.nextInt();
16. }
18. int sum=0;
19. for(int i=0;i<ar.length;i++)
20. sum=sum+ar[i];
22. float avg=(float)sum/ar.length;
23. out.println("Sum is "+sum+"
24. and average is "+avg);
25. }
26. }

**Output**

Enter the size : 3

Enter data 1 : 3

Enter data 2 : 3

Enter data 3 : 3

Sum is 9 and average is 3.0

**Program to add element in Array**

[view plaincopy to clipboardprint?](http://www.tkhts.com/core-java/array/examples.jsp)

1. class Demo
2. {
3. public static void main(String args[])
4. {
5. int []array1=new int[5];
6. System.out.println("Add values in Array..");
7. array1[0]=120;
8. array1[1]=56;
9. array1[2]=10;
10. array1[3]=86;
11. array1[4]=2;
12. System.out.println("Values of array");
13. for(int i=0; i< array1.length;i++)
14. {
15. System.out.println("index "+i+" have "+
16. array1[i]+" value.");
17. }
18. }
19. }

**Output**

Add values in Array..

Values of array

index 0 have 120 value.

index 1 have 56 value.

index 2 have 10 value.

index 3 have 86 value.

index 4 have 2 value.

**Program to remove element from Array**

[view plaincopy to clipboardprint?](http://www.tkhts.com/core-java/array/examples.jsp)

1. class Demo
2. {
3. public static void main(String args[])
4. {
5. int[] array1=new int[5];
6. System.out.println("Add values in Array..");
7. array1[0]=120;
8. array1[1]=56;
9. array1[2]=10;
10. array1[3]=86;
11. array1[4]=2;
12. System.out.println("Values of array");
13. for(int i=0;i<5;i++)
14. {
15. System.out.println("index "+i+" have
16. "+array1[i]+" value.");
17. }
18. System.out.println("Remove element from 3rd index");
19. System.out.println("index 3 have "+array1[3]+" value.");
20. for(int i=0;i<4;i++)
21. {
22. if(i>=3)
23. {
24. array1[i]=array1[i+1];
25. }
26. }
27. System.out.println("New values of array");
28. for(int i=0;i<4;i++)
29. {
30. System.out.println("index "+i+" have
31. "+array1[i]+" value.");
32. }
33. }
34. }

**Output**

Add values in Array..

Values of array

index 0 have 120 value.

index 1 have 56 value.

index 2 have 10 value.

index 3 have 86 value.

index 4 have 2 value.

Remove element from 3rd index

index 3 have 86 value.

New values of array

index 0 have 120 value.

index 1 have 56 value.

index 2 have 10 value.

index 3 have 2 value.

**Program to sort an Array**

[view plaincopy to clipboardprint?](http://www.tkhts.com/core-java/array/examples.jsp)

1. import java.util.Arrays;
3. public class Demo
4. {
5. public static void main(String args[]) throws Exception
6. {
7. int array[] = { 2, 5, -2, 6, -3, 8, 0, -7, -9, 4 };
8. Arrays.sort(array);
9. System.out.println("Sorted array : [length:
10. " + array.length + "]");
11. for (int i = 0; i< array.length; i++)
12. {
13. if(i != 0)
14. {
15. System.out.print(", ");
16. System.out.print(array[i]);
17. }
18. }
19. }
20. }

**Output**

Sorted array : [length: 10]

, -7, -3, -2, 0, 2, 4, 5, 6, 8

**Program to search an element in Array**

[view plaincopy to clipboardprint?](http://www.tkhts.com/core-java/array/examples.jsp)

1. import java.util.Arrays;
2. public class Demo
3. {
4. public static void main(String args[]) throws Exception
5. {
6. int array[] = { 2, 5, -2, 6, -3, 8, 0, -7, -9, 4 };
7. System.out.println("Values in Array ");
8. for (int i = 0; i < array.length; i++)
9. {
10. if(i != 0)
11. {
12. System.out.print(", ");
13. }
14. System.out.print(array[i]);
15. }
16. int index = Arrays.binarySearch(array, 2);
17. System.out.println("Found 2 @ " + index);
18. }
19. }

**Output**

Values in Array

2, 5, -2, 6, -3, 8, 0, -7, -9, 4Found 2 @ -10

**Program to find min and max Element in Array**

[view plaincopy to clipboardprint?](http://www.tkhts.com/core-java/array/examples.jsp)

1. import java.util.Arrays;
2. import java.util.Collections;
3. public class Main
4. {
5. public static void main(String[] args)
6. {
7. Integer[] numbers = { 8, 2, 7, 1, 4, 9, 5};
8. int min = (int) Collections.min(Arrays.asList(numbers));
9. int max = (int) Collections.max(Arrays.asList(numbers));
10. System.out.println("Min number: " + min);
11. System.out.println("Max number: " + max);
12. }
13. }

**Output**

Min number: 1

Max number: 9

**Program to compare two Arrays**

[view plaincopy to clipboardprint?](http://www.tkhts.com/core-java/array/examples.jsp)

1. import java.util.Arrays;
2. public class Main
3. {
4. public static void main(String[] args) throws Exception
5. {
6. int[] ary = {1,2,3,4,5,6};
7. int[] ary1 = {1,2,3,4,5,6};
8. int[] ary2 = {1,2,3,4};
9. System.out.println("Is array 1 equal to array 2??
10. "+Arrays.equals(ary, ary1));
11. System.out.println("Is array 1 equal to array 3??
12. "+Arrays.equals(ary, ary2));
13. }
14. }

**Output**

Is array 1 equal to array 2?? true

Is array 1 equal to array 3?? false