**Java - Introduction to Programming**

**Lecture 10**

**Arrays In Java**

Arrays in Java are like a list of elements of the same type i.e. a list of integers, a list of booleans etc.

1. Creating an Array (method 1) - with new keyword

int[] marks = new int[3];

marks[0] = 97;

marks[1] = 98;

marks[2] = 95;

1. Creating an Array (method 2)

**int[] marks = {98, 97, 95};**

1. Taking an array as an input and printing its elements.

import java.util.\*;

public class Arrays {

public static void main(String args[]) {

Scanner sc = new Scanner(System.in);

int size = sc.nextInt();

int numbers[] = new int[size];

for(int i=0; i<size; i++) {

numbers[i] = sc.nextInt();

}

//print the numbers in array

for(int i=0; i<arr.length; i++) {

System.out.print(numbers[i]+" ");

}

}

}

**Homework Problems**

1. Take an array of names as input from the user and print them on the screen.

import java.util.\*;

public class Arrays {

public static void main(String args[]) {

Scanner sc = new Scanner(System.in);

int size = sc.nextInt();

String names[] = new String[size];

//input

for(int i=0; i<size; i++) {

names[i] = sc.next();

}

//output

for(int i=0; i<names.length; i++) {

System.out.println("name " + (i+1) +" is : " + names[i]);

}

}

}

1. Find the maximum & minimum number in an array of integers.

[HINT : Read about Integer.MIN\_VALUE & Integer.MAX\_VALUE in Java]

import java.util.\*;

public class Arrays {

public static void main(String args[]) {

Scanner sc = new Scanner(System.in);

int size = sc.nextInt();

int numbers[] = new int[size];

//input

for(int i=0; i<size; i++) {

numbers[i] = sc.nextInt();

}

int max = Integer.MIN\_VALUE;

int min = Integer.MAX\_VALUE;

for(int i=0; i<numbers.length; i++) {

if(numbers[i] < min) {

min = numbers[i];

}

if(numbers[i] > max) {

max = numbers[i];

}

}

System.out.println("Largest number is : " + max);

System.out.println("Smallest number is : " + min);

}

}

1. Take an array of numbers as input and check if it is an array sorted in ascending order.

Eg : { 1, 2, 4, 7 } is sorted in ascending order.

{3, 4, 6, 2} is not sorted in ascending order.

import java.util.\*;

public class Arrays {

public static void main(String args[]) {

Scanner sc = new Scanner(System.in);

int size = sc.nextInt();

int numbers[] = new int[size];

//input

for(int i=0; i<size; i++) {

numbers[i] = sc.nextInt();

}

boolean isAscending = true;

for(int i=0; i<numbers.length-1; i++) { // NOTICE numbers.length - 1 as termination condition

if(numbers[i] > numbers[i+1]) { // This is the condition for descending order

isAscending = false;

}

}

if(isAscending) {

System.out.println("The array is sorted in ascending order");

} else {

System.out.println("The array is not sorted in ascending order");

}

}

}