**ICS 102 Problem Set 05: 1D-Arrays**

1. What is the output of the following program fragment?

int[] A = new int[6];

int i, n = 6;

for(i = 0; i < n; i++)

if (i % 2 == 0)

A[i] = 5 \* i;

else

A[n - i] = -5 \* i;

for(i = 0; i < n; i++)

System.out.printf("%d\n", A[i]);

1. What is the output of the following program fragment if its input is: **2 4 11 7 6 -3** ?

int[] a = new int[6], b = new int[6];

int j;

for(j = 0; j < 6; j += 2)

a[j] = scanner.nextInt();

for(j = 5; j >= 1; j -= 2)

a[j] = scanner.nextInt();

System.out.printf("%d %d %d\n",a[1],a[3],a[4]);

for(j = 0; j < 6; j += 2)

if (a[j] > 4){

a[j] -= 2;

b[j] = a[j] + 4;

}

else{

a[j] -= 4;

b[j] = a[j] + 3;

}

System.out.printf("%d %d %d%n",b[0],b[2],b[4]);

1. What is the output of the following program fragment if its input is: **1 3 5 7 9 11** ?

int[] x = new int[3],y = new int[3];

System.out.printf("Enter 6 integer values: ");

for (int i = 0;i < 3;i++){

x[i] = scanner.nextInt();

y[2-i] = scanner.nextInt();

}

for(int i = 0;i < 3;i++)

System.out.printf("%d\t%d%n",x[i],y[i]);

1. Find the output of the following program fragment:

int[] x = new int[6];

int i;

x[0] = 1; x[2] = 3; x[4] = 5;

for(i = 5;i > 0;i = i-2)

x[i] = x[i-1] + i;

for(i = 1;i < 6;i = i+2)

System.out.printf("%d\t",x[i]);

1. Find the output of the following program fragment:

final int size = 6;

int[] x = new int[size];

int i;

for(i = 0;i < 5;i = i+2){

x[i]=i\*2;

if(i%2 == 0)

x[i+1] = x[i] + i + 1;

else

x[i] = x[i-1] + 3;

}

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

System.out.printf("%d ",x[i]);

1. Find the output of the following program fragment:

int[] x = {3,2,1,4,6,8}, y = new int[6];

for(int i=0;i<6;i++) {

if(i%3 == 0)

y[i]= x[i]-1;

else if(i%3 == 1)

y[i]= y[i-1] + 2;

else

y[i] = x[i] + 5;

System.out.printf("%d\t",y[i]);

}

1. Find the output of the following program fragment:

int[] x ={4,5,6,6,4,2};

int i = 0;

do{

x[i]= x[i] +x[6-i-1];

i++;

}while(i < 6);

for(i = 0;i < 6;i++)

System.out.printf("%d\t",x[i]);

1. What is the output of the following program fragment?

int[] x = {8,11,12,19,24,33};

int sum = 0;

for(int i = 0; i < 6; i++){

if (x[i]%2 == 0 && x[i]%3 == 0)

continue;

System.out.printf("%d ", x[i]);

sum += x[i];

if(sum > 20)

break;

}

1. What is the output of the following program fragment?

int[] a = new int[7], b = {36,49,70};

a[0] = 53;

a[2] = 45;

a[4] = 34;

a[6] = 19;

for(int k = 0; k < 3; k++) {

for(int j = 0; j < 5; j = j+2) {

if(b[k] >= a[j]) {

a[j+1] = b[k];

b[k] = a[j];

break;

}

}

}

System.out.printf("%d %d %d%n ", a[1], a[3], a[5]);

System.out.printf("%d %d %d%n ", b[0], b[1], b[2]);

1. Write a program that reverses the elements of a 1D integer array.
2. Write a program to test whether a1D integer array is a set or not. An array is a set if it has no duplicate elements.
3. Write an application that inputs 10 numbers, each between 10 and 100. As each number is read, display it only if it is not a duplicate of a number already read.
4. Given an array of integers, write a Java program that allows checking if the array is “palindromic”. A palindromic array is a symmetric one: For example the arrays 1 6 4 6 1 and 258852 are both palindromic, but the array 3753 is not.
5. Write a program that reads a sequence of 10 integers into an array and then computes the alternating sum of all elements in the array.

For example if the array is : 1 4 9 16 9 7 4 9 11

then it computes : 1 – 4 + 9 – 16 + 9 – 7 + 4 – 9 + 11 = -2