Lab 10 Array-1- Solutions:

Q1) readArray

```
import java.util.Scanner;
public class readArray {
	public static void main(String[] args) {
		Scanner kb = new Scanner(System.in );
		System.out.print("Please enter how many integers: ");
		int n = kb.nextInt();
		int ar[] = new int[n];

		System.out.print("Please enter the "+n+" integers: ");
		for (int i=0; i < n ;i++  )
			ar[i] = kb.nextInt();

		System.out.print("Printing the elements in order: ");
		int i = 0;
		while (i < n) { System.out.print(ar[i]+" "); i++; }
		System.out.println();

		System.out.print("Printing in reverse: ");
		i = n-1;
		while (i >= 0) { System.out.print(ar[i]+" "); i--; }
		System.out.println();

		System.out.print("Printing odd numbers: ");
		i = 0;
		while (i < n) {
			if (ar[i] % 2 != 0)  System.out.print(ar[i]+" "); i++; }

		System.out.println();

		System.out.print("Printing even indices only: ");
		i = 0;
		while (i < n) {
			if ( i % 2 == 0  ) System.out.print(ar[i]+" "); i++; }
		System.out.println();

		// Computing the average
		int sum = 0; double avg;
		for (i=0; i< n; i++) sum = sum + ar[i];
		avg = (double) sum/n;
		System.out.print("Average of all numbers: "+avg);
	}
}
```

Q2) halfArray

```
import java.util.Scanner;
public class halfArray {
	public static void main(String[] args) {
		Scanner input = new Scanner(System.in );
		final int Max_Size = 100;
		int ar[]= new int[Max_Size];
		System.out.print("Please enter the integers: ");
		int x = input.nextInt();
		int i = 0;
		while (x != -1) { ar[i] = x; i++; x = input.nextInt(); }
		int size = i;

		System.out.println("The number of integers "
				+ " that have been read is "+size);
		System.out.print("The array elements in order: ");
		i =0;
		while ( i < size ) {
			System.out.print(ar[i]+" ");
			i++;
		}
		System.out.println();

		System.out.print("The array elements in reverse: ");
		i =size-1;
		while ( i >=0 ) {
			System.out.print(ar[i]+" ");
			i--;
		}
		System.out.println();

		System.out.print("The first half of array elements: ");
		i =0;
		while ( i < size/2 ) {
			System.out.print(ar[i]+" ");
			i++;
		}
		System.out.println();
		// Computing the average
		int sum = 0; double avg;
		for (i=0; i< size; i++) sum = sum + ar[i];
		avg = (double) sum/size;
		System.out.print("Average of all numbers: "+avg);


	}
}
```

Q3) arraySearch

```
import java.util.Scanner;
public class arraySearch {
public static void main(String[] args) {
	Scanner input = new Scanner(System.in );
	final int Max_Size = 50;
	int ar[]= new int[Max_Size];
	System.out.print("Please enter the numbers: ");
	int i = 0;
	int x = input.nextInt();
	while (x != -1) {
		ar[i++] = x;
		x = input.nextInt();
		}

	int size = i;
	System.out.print("Please enter element to search: ");
	x = input.nextInt();
	int index = -1;
	i =0;
	while (index == -1 && i < size) {
		if (ar[i] == x) index = i;
		i++;
		}

	if (index != -1)
		System.out.println("The number "+x+" found at index "+index);
	else System.out.println("Sorry "+x+" is not in the Array");


	}
}
```