# Class MyArray

package dsaAssignment2;  
  
import java.util.Scanner;  
  
public class MyArray {  
  
 private int[] arr;  
 int count = 0;  
 Scanner sc = new Scanner(System.*in*);  
  
 public MyArray(int length) {  
 arr = new int[length];  
 }  
  
 public void print() {  
 for (int i = 0; i < arr.length; i++) {  
 System.*out*.println(arr[i]);  
 }  
 }  
  
 // insert function  
 // 2) Create method for INSERT operation of ARRAY.  
 public void insert(int elements) {  
 // System.out.println("running3 "+ count);  
  
 if (arr.length == count) { // not executes when length and elements are same 5,5  
  
 // System.out.println("running1 "+ count);  
 // System.out.println("running2 "+ items.length);  
 int[] newItems = new int[count \* 2];  
 // System.out.println(newItems.toString());  
 // elements from the old array to the new array  
 for (int i = 0; i < count; i++) {  
 newItems[i] = arr[i];  
 }  
  
 arr = newItems; // reference  
 }  
  
 // Insert the new element at the end of the array  
 // and increment the count of elements  
 // System.out.println("running3 "+ count);  
 arr[count++] = elements; // count is basically index  
  
 // System.out.println("running4 "+count); // value is 5  
  
 }  
  
 // 3) Create method for REMOVE operation of ARRAY.  
 public void remove(int index) {  
 System.*out*.println("running1 " + count); // val 5  
 for (int i = index; i < count; i++) {  
 System.*out*.println("running2 " + count);  
 arr[i] = arr[i + 1];  
 count--;  
 }  
 }  
  
 // 4) Create method for SEARCH operation of ARRAY.  
  
 public int search(int element) {  
 for (int i = 0; i < arr.length; i++) {  
 if (arr[i] == element) {  
 int val = (i + 1);  
 return val;  
 }  
  
 }  
 return 0;  
 }  
  
 // 5) Create method for finding MAX number in ARRAY.  
  
 public void max() {  
 int max = arr[0]; // should be "sabse chota number" or assign first element  
 for (int i = 0; i < arr.length; i++) {  
 if (max < arr[i]) { // comparing with every element  
 max = arr[i]; // agar koi value 0 ya first element se choti ha store that value in max  
 }  
 }  
 System.*out*.println("max is : " + max);  
 }  
  
 // 6) Create method for finding MIN number in ARRAY.  
  
 public void min() {  
 int min = arr[0];  
 for (int i = 0; i < arr.length; i++) {  
 if (min > arr[i]) {  
 min = arr[i];  
 }  
 }  
 System.*out*.println("Min is: " + min);  
 }  
  
 // 7) Create method for finding Common number of items from two ARRAYS.  
  
 public void intersection() {  
 System.*out*.println("Enter Size of set/ Array 1 to find intersection: ");  
 int n1 = sc.nextInt();  
 int[] arr1 = new int[n1];  
 for (int i = 0; i < arr1.length; i++) {  
 System.*out*.println("Enter Value in :" + (i + 1));  
 arr1[i] = sc.nextInt();  
 }  
 System.*out*.println("Enter Size of set/ Array 2 to find intersection: ");  
 int n2 = sc.nextInt();  
 int[] arr2 = new int[n2];  
 for (int i = 0; i < arr2.length; i++) {  
 System.*out*.println("Enter Value in :" + (i + 1));  
 arr2[i] = sc.nextInt();  
 }  
 System.*out*.println("Common Values are: ");  
 for (int i = 0; i < arr1.length; i++) {  
 for (int j = 0; j < arr2.length; j++) {  
 if (arr1[i] == arr2[i]) {  
 System.*out*.println(arr1[i]);  
 break;  
 }  
 }  
 }  
 }  
  
 // 8) Create method for finding Product of numbers in ARRAY.  
  
 public void productOfArray() {  
 int res = 1;  
 for (int i = 0; i < arr.length; i++) {  
 res = res \* arr[i];  
 }  
 System.*out*.println(res);  
 }  
  
 // 9) Create method for finding AVERAGE of numbers in ARRAY.  
  
 public void average() {  
 int n = 0;  
 for (int i = 0; i < arr.length; i++) {  
 n += arr[i];  
 }  
 int avg = n / arr.length;  
 System.*out*.println("avg : " + avg);  
 }  
  
 // 10) //Create method for returning REVERSE of ARRAY.  
  
 public void reversedArray() {  
 for (int i = arr.length - 1; i >= 0; i--) {  
 System.*out*.print(arr[i] + " ");  
 }  
 }  
  
 // Create method for REPLACE number in ARRAY.  
  
 public void replaceWith(int index, int element) {  
 if (index >= 0 && index < arr.length) { // index is within the valid range, could be count  
 arr[index] = element;  
 for (int i = 0; i < arr.length; i++) {  
 System.*out*.print(arr[i] + " ");  
 }  
 } else {  
 System.*out*.println("Index out of bounds");  
 }  
 }  
  
 // Create method for finding Distinct numbers in ARRAY  
 public void distinct() {  
 for (int i = 0; i < count; i++) {  
 int j;  
 for (j = 0; j < i; j++) {  
 if (arr[i] == arr[j]) {  
 break;  
 }  
 }  
 if (i == j) {  
 System.*out*.println(arr[i]);  
 }  
 }  
 }  
  
 // Create method for finding EVEN numbers in ARRAY.  
  
 public void even() {  
 for (int i = 0; i < count; i++) {  
 if (arr[i] % 2 == 0) {  
 System.*out*.println(arr[i]);  
 }  
 }  
 }  
  
 public void odd() {  
 for (int i = 0; i < count; i++) {  
 if (arr[i] % 2 != 0) { // jo 2 se divide na ho completely let them print  
 System.*out*.println(arr[i]);  
 }  
 }  
 }  
  
 public MyArray prime() {  
 MyArray prime = new MyArray(count);  
 for (int i = 0; i < count; i++) {  
 boolean isPrime = true;  
 for (int j = 2; j < arr[i] / 2; j++) {  
 if (arr[i] % j == 0) {  
 isPrime = false;  
 break;  
 }  
 }  
 if (isPrime) { // if true  
 prime.insert(arr[i]);  
 }  
 }  
 return prime;  
 }  
  
}

## Class Start/Main

package dsaAssignment2;  
  
import java.util.Scanner;  
  
public class Start {  
 public static void main(String[] args) {  
 MyArray array;  
 Scanner sc = new Scanner(System.*in*);  
 System.*out*.println("enter Length");  
 int length = sc.nextInt();  
 array = new MyArray(length);  
  
 System.*out*.println("Insert Values ");  
 for (int i = 0; i < length; i++) {  
 int elements = sc.nextInt();  
 array.insert(elements);  
 }  
  
 System.*out*.println();  
 System.*out*.println("1 to Remove element");  
 System.*out*.println("2 to SEARCH element");  
 System.*out*.println("3 to MAX element");  
 System.*out*.println("4 to MIN element");  
 System.*out*.println("5 to Common element");  
 System.*out*.println("6 to Product element");  
 System.*out*.println("7 to AVERAGE element");  
 System.*out*.println("8 to REVERSE element");  
 System.*out*.println("9 to Distinct element");  
 System.*out*.println("10 to REPLACE element");  
 System.*out*.println("11 to EVEN element");  
 System.*out*.println("12 to ODD element");  
 System.*out*.println("13 to PRIME element");  
 System.*out*.println();  
  
 while (true) {  
 System.*out*.print("Enter Choice: ");  
 int choice = sc.nextInt();  
  
 switch (choice) {  
 case 1: {  
 System.*out*.println("Remove ");  
 int index = sc.nextInt();  
 array.remove(index);  
 break;  
 }  
 case 2: {  
 System.*out*.println("Search");  
 System.*out*.println("\n Enter Element");  
 int element = sc.nextInt();  
 System.*out*.println("value found on position " + array.search(element));  
 break;  
 }  
 case 3: {  
 System.*out*.println("Max of array");  
 array.max();  
 break;  
 }  
 case 4: {  
 System.*out*.println("Min of array");  
 array.min();  
 break;  
 }  
 case 5: {  
 System.*out*.println("Common Element");  
 array.intersection();  
 break;  
 }  
 case 6: {  
 System.*out*.println("Product Of Array");  
 array.productOfArray();  
 break;  
 }  
 case 7: {  
 System.*out*.println("Average of array");  
 array.average();  
 break;  
 }  
 case 8: {  
 System.*out*.println("Reversed array");  
 array.reversedArray();  
 break;  
 }  
 case 9: {  
 System.*out*.println("Distinct Element ");  
 array.distinct();  
 break;  
 }  
 case 10: {  
 System.*out*.println("Replace Element ");  
 System.*out*.print("Enter index: ");  
 int key = sc.nextInt();  
 System.*out*.print("Enter Element: ");  
 int element = sc.nextInt();  
 array.replaceWith(key, element);  
 break;  
 }  
 case 11: {  
 System.*out*.println("Even numbers in Array :");  
 array.even();  
 break;  
 }  
 case 12: {  
 System.*out*.println("Odd Numbers in Array: ");  
 array.odd();  
 break;  
 }  
 case 13: {  
 System.*out*.println("Prime");  
 System.*out*.println(array.prime());  
 break;  
 }  
  
 default: {  
 System.*out*.println("Invalid number entered !!!");  
 break;  
 }  
 }  
   
 }  
 }  
}