**KING SAUD UNIVERSITY**

**COLLEGE OF APPLIED STUDIES AND COMMUNITY SERVICE**

**CSC 1101 First Semester 1436-1437 Tut # 11 Instructor:Nada Alhirabi**

**Q1.** What would be output by the following section of C++?

int A[5] = {1 , 2, 3, 4};

int i;

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

{

A[i] = 2\*A[i];

cout << A[i] << " ";

}

output: 2 4 6 8 0

**Q2.** What is wrong with the following section of program?

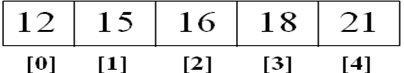
int A[10], i;

for (i=1; i<=10; i++)

cin >> A[i]; // A[10] is not part of the array, so we can not assign any value inside it.

**Q3.** Write a program that calculates the sum of the even elements

of the array below.



int A[5] = {12 , 15, 18, 21};

int i, sum=0;

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

{

if(A[i]%2==0) //to see if it is even or not

sum+=A[i];

}

cout<<sum;

**Q4.** write a program that declares two integer arrays, say with 5 elements each, andcarries out the following:

1. Input some data from the user into the two arrays.
2. Multiplies the odd values in the array1 by 2.
3. Adds 2 to each element in the array2 with an even index
4. Output the sum of the elements in each of the two arrays.
5. Output the inner product of the two arrays - that is the sum of the products of corresponding elements A[0]\*B[0] + A[1]\*B[1]+ ....etc.
6. Return the minimum element in Array 1
7. Search Array2 for an element entered by the user.

int A[5] , B[5];

int i, sum=0;

**// (a) Input some data from the user into the two arrays.**

cout<<"please enter array 1 elements: "<<endl;

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

{

cin>>A[i];

}

cout<<"please enter array 2 elements: "<<endl;

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

{

cin>>B[i];

}

**//(b) Multiplies the odd values in the array1 by 2.**

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

{

if(A[i]%2!=0)

A[i]\*=B[i];

}

**//(c) Adds 2 to each element in the array2 with an even index**

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

{

if(i%2==0)

B[i]+=2;

}

//printing the arrays

cout<<"\nArray 1 elements :";

for(i=0; i<5; i++)cout<<A[i]<<" ";

cout<<"\nArray 2 elements :";

for(i=0; i<5; i++)cout<<B[i]<<" ";

**//(d) Output the sum of the elements in each of the two arrays.**

int sum1=0, sum2=0;

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

{

sum1+=A[i];

sum2+=B[i];

}

cout<<"\nThe sum of array 1: "<<sum1<<"\nThe sum of array2:"<<sum2<<endl;

**//(e)Output the inner product of the two arrays - that is the sum of the products of corresponding elements A[0]\*B[0] + A[1]\*B[1]+ ....etc.**

int inner\_product=0;

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

{

inner\_product= inner\_product + (A[i]\*B[i]);

}

cout<<"The inner product of array 1 and array 2: "<<inner\_product<<endl;

**//(f) Return the minimum element in Array 1**

int min=A[0];

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

{

if(A[i]<min)

min=A[i];

}

cout<<"The minimum element in Array 1: "<<min<<endl;

**//(g)Search Array2 for an element entered by the user.**

int num,found=0;

cout<<"please enter number you want to search to at array 2 elements: "<<endl;

cin>>num;

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

{

if(B[i]==num) {

cout<<num <<" is found in array 2"<<endl;

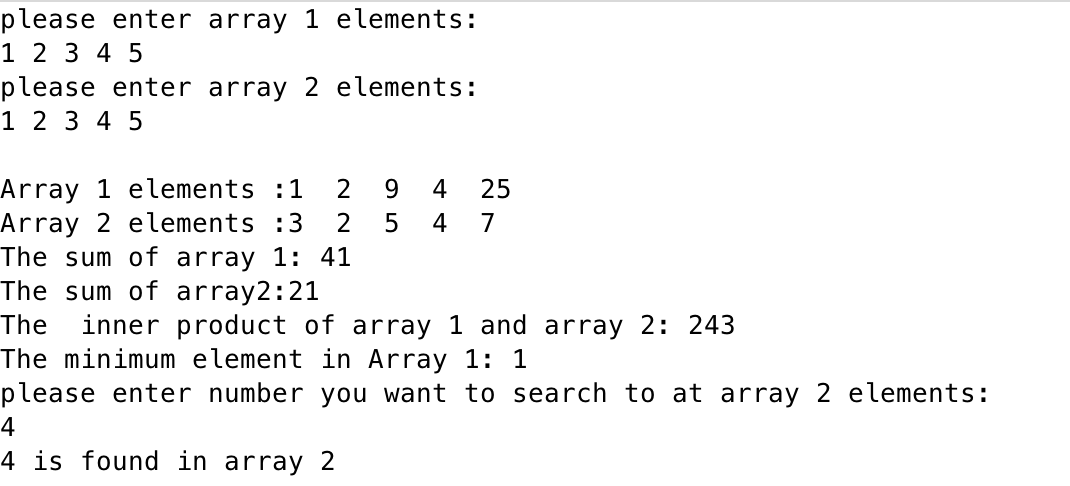
found=1;

break;

}

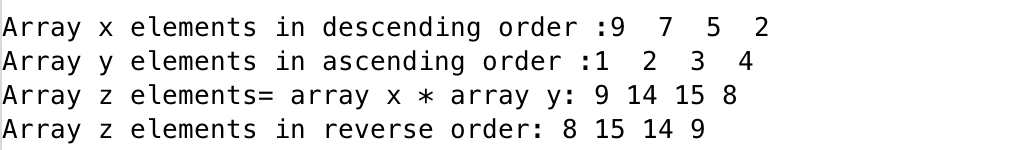
}

if(found==0)cout<<num <<" is not found in array 2"<<endl;

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**Q4.** Given the following 2 arrays : x[ ]={2,7, 5 , 9 } and y[ ]={ 1, 4, 3,2}

1. Sort array x in descending order and array y in ascending order, and display the two arrays.
2. Multiply the two arrays and put the result in a third array z.



1. Display the values of array z in reverse order .

int x[ ]={2,7, 5 , 9 } ,y[ ]={ 1, 4, 3,2} ;

int outer, inner;

**//a) Sort array x in descending order and array y in ascending order**

//bubbleSort for descending (largest to smallest)

for (outer =4-1; outer > 0; outer--) { // counting down

for (inner = 0; inner < outer; inner++) { // bubbling up

if (x[inner] < x[inner + 1]) { // if out of order...

int temp = x[inner]; // ...then swap

x[inner] = x[inner + 1];

x[inner + 1] = temp;

}

}

}

cout<<"\nArray x elements in descending order :";

for(int i=0; i<4; i++)cout<<x[i]<<" ";

//bubbleSort for descending (smallest to largest)

for (outer =4-1; outer > 0; outer--) { // counting down

for (inner = 0; inner < outer; inner++) { // bubbling up

if (y[inner] > y[inner + 1]) { // if out of order...

int temp = y[inner]; // ...then swap

y[inner] = y[inner + 1];

y[inner + 1] = temp;

}

}

}

cout<<"\nArray y elements in ascending order :";

for(int i=0; i<4; i++)cout<<y[i]<<" ";

**//(b) Multiply the two arrays and put the result in a third array z.**

int z[]={};

for(int i=0; i<4; i++)z[i]=x[i]\*y[i];

cout<<"\nArray z elements= array x \* array y: ";

for(int i=0; i<4; i++)cout<<z[i]<<" ";

**//(c) Display the values of array z in reverse order**

int temp=0;

for(int i=0, j=4-1; i<4/2; i++,j--){//4 is the length

temp = z[i]; // ...then swap

z[i] = z[j];

z[j] = temp;

}

cout<<"\nArray z elements in reverse order: ";

for(int i=0; i<4; i++)cout<<z[i]<<" ";