



NATIONAL UNIVERSITY OF SCIENCES & TECNOLOGY

SCHOOL OF MECHANICAL AND MANUFACTURING ENGINEERING

SEMESTER # 01

CLASS: - ME 15 [SEC A]

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Fundamentals of Programming

LAB MANUAL 07

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Submitted to MUHAMMAD AFFAN

QUESTION NUMBER 01

/*

Take 10 integer inputs from user and store them in an array and print them on screen.

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*/

#include<iostream>

using namespace std;

int main ()

{

int arr[10]; //declaring array with 10 elements.

cout<<"enter 10 values :"<<endl; //values from user

for(int i=0;i<10;i++)

{ cout<<"enter "<<i+1<<" value of array ";

cin>>arr[i];} //entering values from user in arr[10]

for (int i=0;i<10;i++)

{cout<<arr[i] <<" "; //printing values

}

return 0;

}

/*

Take 10 integer inputs from user and store them in an array and print them on screen.

*/

#include<iostream>

using namespace std;

int main ()

{

int arr[10]; //declaring array with 10 elements.

cout<<"enter 10 values :"<<endl; //values from user

for(int i=0;i<10;i++)

{ cout<<"enter "<<i+1<<" value of array ";

cin>>arr[i];} //entering values from user in arr[10]

for (int i=0;i<10;i++)

{cout<<arr[i] <<" "; //printing values

}

return 0;

}

Take 10 integer inputs from user and store them in an array and print them on screen.

```
C:\Users\Deir\Desktop\C++\Lab\Lab tasks\Task No.07\Question No. 01.exe
enter 10 values :
enter 1 value of array 1
enter 2 value of array 2
enter 3 value of array 3
enter 4 value of array 4
enter 5 value of array 5
enter 6 value of array 6
enter 7 value of array 7
enter 8 value of array 8
enter 9 value of array 9
enter 10 value of array 0
1 2 3 4 5 6 7 8 9 0
-----
Process exited after 5.394 seconds with return value 0
Press any key to continue . . .
```

QUESTION NUMBER 02

/* _____

Write a program to find the sum and product of all elements of an array with 5 integer elements.

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*/

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {
```

```
    // Declare an array of 5 integers
```

```
    int array[5];
```

```
    // Get input from the user
```

```
    cout << "Enter 5 integer elements:\n";
```

```
    for (int i = 0; i < 5; ++i) {
```

```
        cout << "Enter element " << i + 1 << ": ";
```

```
        cin >> array[i];
```

```
    }
```

```
    // Calculate sum and product
```

```
    int array_sum = 0;
```

```
    int array_product = 1;
```

```
    for (int i = 0; i < 5; ++i) {
```

```
        array_sum += array[i];
```

```
        array_product *= array[i];
```

```
    }
```

```
    // Print the results
```

```
    cout << "Sum of elements: " << array_sum << endl;
```

```
    cout << "Product of elements: " << array_product << endl;
```

```
    return 0;
```

Write a program to find the sum and product of all elements of an array with 5 integer elements.

}

```
/*  
Write a program to find the sum and product of all elements of an array wi  
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*/  
  
#include <iostream>  
using namespace std;  
int main() {  
    // Declare an array of 5 integers  
    int array[5];  
  
    // Get input from the user  
    cout << "Enter 5 integer elements:\n";  
    for (int i = 0; i < 5; ++i) {  
        cout << "Enter element " << i + 1 << ": ";  
        cin >> array[i];  
    }  
  
    // Calculate sum and product  
    int array_sum = 0;  
    int array_product = 1;  
  
    for (int i = 0; i < 5; ++i) {  
        array_sum += array[i];  
        array_product *= array[i];  
    }  
  
    // Print the results  
    cout << "Sum of elements: " << array_sum << endl;  
    cout << "Product of elements: " << array_product << endl;  
  
    return 0;  
}
```

```
C:\Users\Dell\Desktop\C++\Lab\Lab tasks\Task No.07\Question No. 02.exe
Enter 5 integer elements:
Enter element 1: 1
Enter element 2: 2
Enter element 3: 3
Enter element 4: 4
Enter element 5: 5
Sum of elements: 15
Product of elements: 120

-----
Process exited after 3.873 seconds with return value 0
Press any key to continue . . .
```

QUESTION NUMBER 03

```
/*
```

Print diamond pattern using a single array.

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```
*/
```

```
#include <iostream>
using namespace std;
```

```
int main()
{
```

```
    int n; //declaring number of rows
    cin>>n; //input number of rows from user
    int half = n/2; //midpoint of each row
    char diamond[n]; //declaring array with n number of rows
```

```
    for (int i=0; i<n; i++)
    {diamond[i] = ' ';} //filling spaces in all places of array
```

```
    for (int i=0; i<=half; i++)
    {
        for (int j=0; j<n; j++)
        {diamond[half+i] = '*'; //filling stars in mid points of all arrays.
          diamond[half-i] = '*';
          cout<<diamond[j];
        }cout<<endl;}
    }
```

```
    for (int i=0; i<n; i++)  
    {diamond[i] = '*' ;}  
  
    for (int i=half; i>0; i--)  
    {  
        for (int j=0; j<n; j++)  
        {diamond[half+i] = ' '  
        diamond[half-i] = ' '  
        cout<<diamond[j];}  
        cout<<endl;}  
    return 0;  
}
```

```
/*
Print diamond pattern using a single array.
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*/

#include <iostream>
using namespace std;

int main()
{
    int n; //declaring number of rows
    cin>>n; //input number of rows from user
    int half = n/2; //midpoint of each row
    char diamond[n]; //declaring array with n number of rows

    for (int i=0; i<n; i++)
    {diamond[i] = ' ';} //filling spaces in all places of array

    for (int i=0; i<=half; i++)
    {
        for (int j=0; j<n; j++)
        {diamond[half+i] = '*'; //filling stars in mid points of all arrays.
          diamond[half-i] = '*';
          cout<<diamond[j];
        }cout<<endl;}

    for (int i=0; i<n; i++)
    {diamond[i] = '*';}

    for (int i=half; i>0; i--)
    {
        for (int j=0; j<n; j++)
        {diamond[half+i] = ' ';
          diamond[half-i] = ' ';
          cout<<diamond[j];}
        cout<<endl;}
    return 0;
}
```

```
7
  *
 ***
*****
*****
 *****
  *****
   ***
    *

+-----+
Process exited after 1.002 seconds with return value 0
Press any key to continue . . .
```