NATIONAL UNIVERSITY OF SCIENCES & TECNOLOGY

SCHOOL OF MECHANICAL AND MANUFACTURING ENGINEERING

SEMESTER # 01

CLASS: - ME 15 [SEC A]

KASHIF NADEEM KAYANI

456466

Fundamentals of Programming

LAB MANUAL 07

Date of Submission **15 NOV 2023**

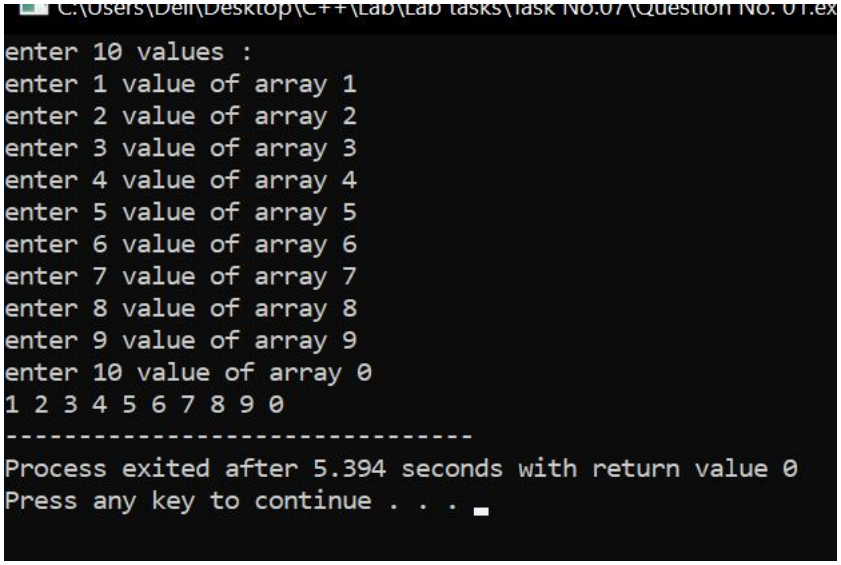
Submitted to **MUHAMMAD AFFAN**

QUESTION NUMBER 01

```
/*_____________________________________________________________________
Take 10 integer inputs from user and store them in an array and print them on
screen.
KASHIF NADEEM KAYANI          456466          ME-15 SEC    A
*/
#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.

```
/*_____________________________________________________________________
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;
}
```



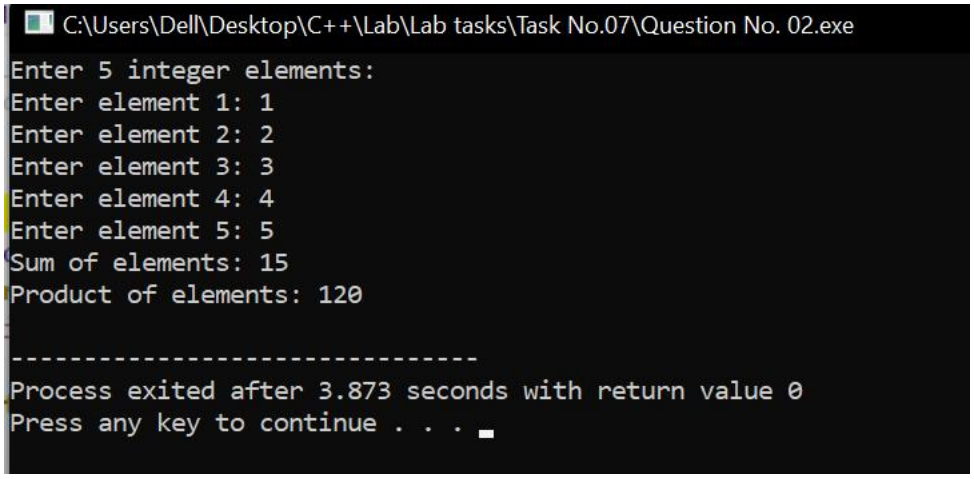
QUESTION NUMBER 02

```
/*_____
___
Write a program to find the sum and product of all elements of an array with 5
integer elements.
KASHIF NADEEM KAYANI          456466          ME-15 SEC    A
*/
#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.

}

```cpp
/*
Write a program to find the sum and product of all elements of an array wi
KASHIF NADEEM KAYANI      456466       ME-15 SEC  A
*/

#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;
}
```



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;
}
```

```cpp
/*
Print diamond pattern using a single array.
KASHIF NADEEM KAYANI     456466     ME-15 SEC A
*/

#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 . . .
```