Lab Manual 7

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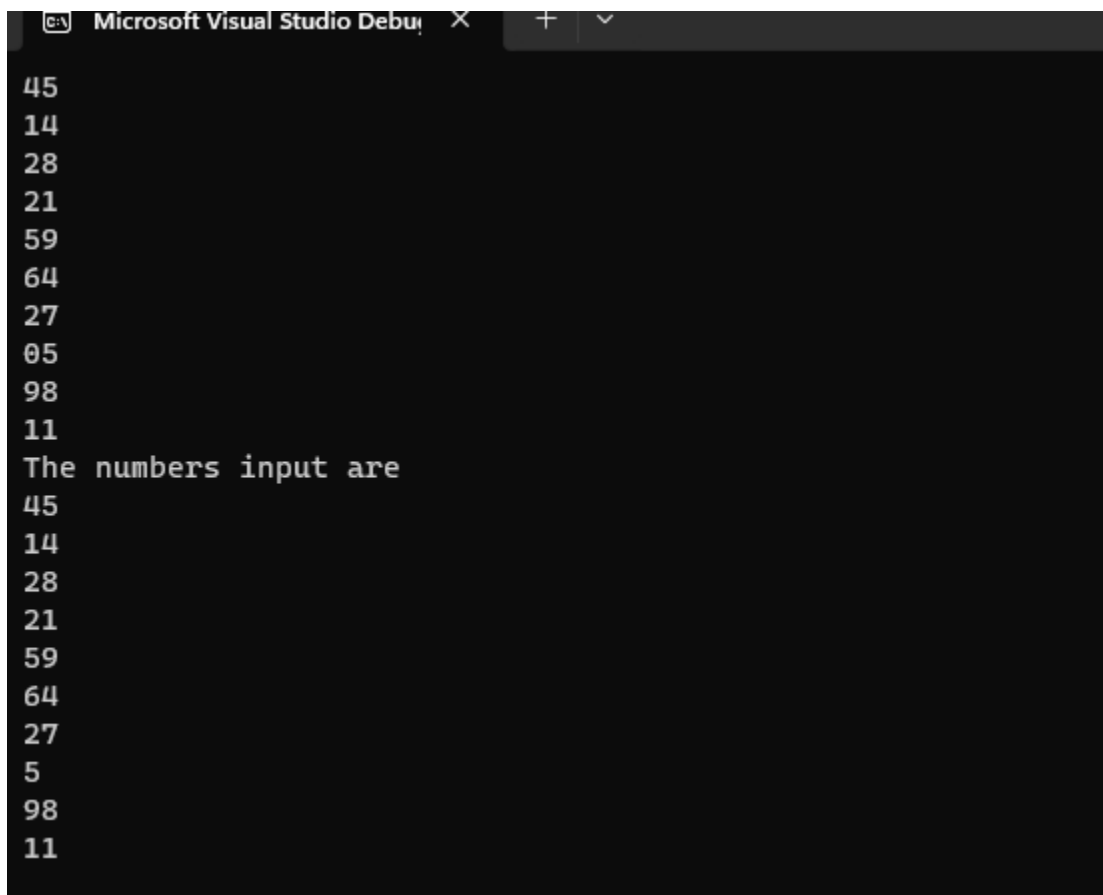
Class: ME-15(C)

ID: 459203

Lab Task

Task 1:

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

```cpp
#include <iostream>
using namespace std;
int main()
{
        int num[10];
        for (int i = 0; i <=9; i++)
        {
                cin >> num[i];
        }
        cout << "The numbers input are \n";
        for (int i = 0; i <=9; i++)
        {
                cout << num[i] << endl;
        }
        return 0;
}
```
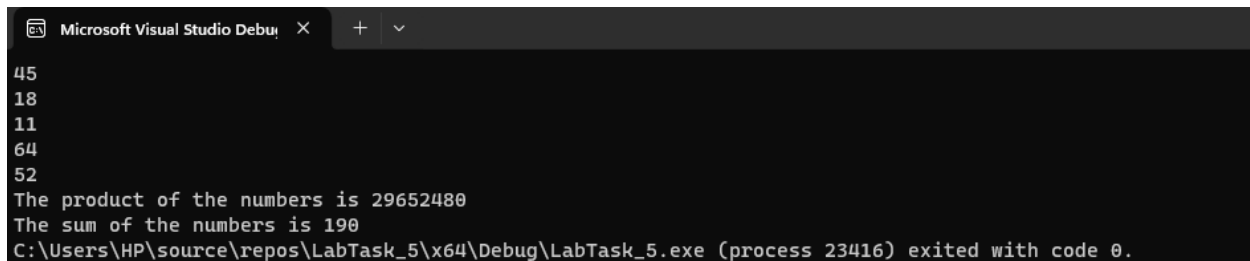
```
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45
14
28
21
59
64
27
05
98
11
The numbers input are
45
14
28
21
59
64
27
5
98
11
```

Task 2:

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

```cpp
#include <iostream>
using namespace std;
int main()
{
        int num[5];
        for (int i = 0; i <=4; i++)
        {
                cin >> num[i];
        }
        int product = 1;
        int sum = 0;
        for (int i = 0; i <=4; i++)
        {
                sum += num[i];
        }
        for (int i = 0; i <= 4; i++)
        {
                product *= num[i];
        }
        cout << "The product of the numbers is " << product << endl;
        cout << "The sum of the numbers is " << sum;
        return 0;
}
```

```
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45
18
11
64
52
The product of the numbers is 29652480
The sum of the numbers is 190
C:\Users\HP\source\repos\LabTask_5\x64\Debug\LabTask_5.exe (process 23416) exited with code 0.
```

Task 3:

Print a diamond pattern using a single array.

```cpp
#include <iostream>
using namespace std;
int main()
{
        char pattern[5];
        int pos = 5 / 2;
        int pos1 = pos;
        int pos2 = pos;
        for (int i = 0; i <=2; i++)
        {
                for (int j = 0; j < 5; j++)
                {
                        if (j >= pos1 && j <= pos2)
                        {
                                pattern[j] = '*';
```

```cpp
			}
			else
			{
				pattern[j] = ' ';
			}
		}
		for (int k = 0; k < 5; k++)
		{
			cout << pattern[k];
		}
		pos1 -= 1;
		pos2 += 1;
		cout << endl;
	}
	pos1 += 2;
	pos2 -= 2;
	for (int e = 0;e <= 1; e++)
	{
		for (int j = 0; j < 5; j++)
		{
			if (j >= pos1 && j <= pos2)
			{
				pattern[j] = '*';
			}
			else
			{
				pattern[j] = ' ';
			}
		}
		for (int k = 0; k < 5; k++)
		{
			cout << pattern[k];
		}
		pos1 += 1;
		pos2 -= 1;
		cout << endl;
	}
	return 0;
}
```

```
  *
 ***
*****
 ***
  *
```