

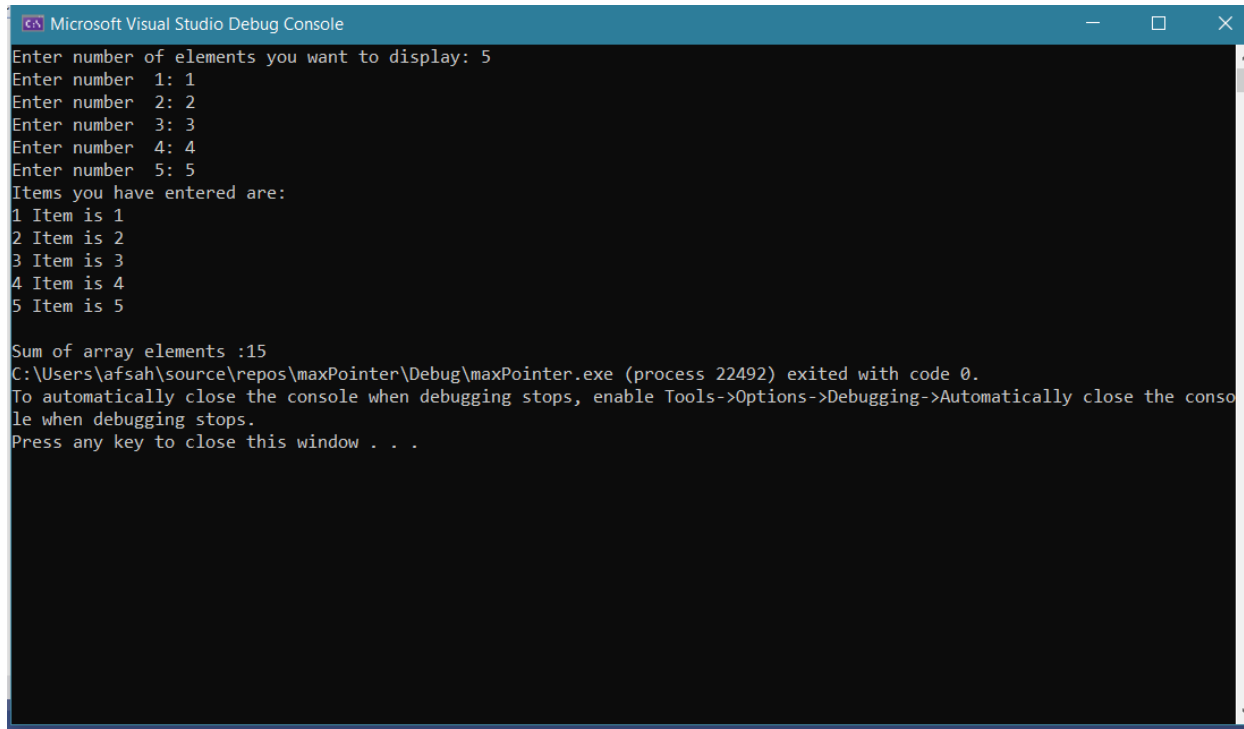
Lab#02  
OOP  
25/Oct/2022

**Task#01**

Write a program that:

- a. Takes input from the user about array size.
- b. Fill array using user inputs.
- c. Output values in array.
- d. Sum all elements in that array.

**Hint:** use pointers for memory allocation.

A screenshot of the Microsoft Visual Studio Debug Console window. The window has a blue title bar with the text "Microsoft Visual Studio Debug Console" and standard window controls (minimize, maximize, close). The console area is black with white text. The text shows the program's execution: it prompts for the number of elements (5), then for each element (1 through 5), displaying the entered values. It then lists the items, calculates the sum (15), and shows the program path and exit code. A message at the bottom suggests enabling automatic console closure in the debug options.

```
Microsoft Visual Studio Debug Console
Enter number of elements you want to display: 5
Enter number 1: 1
Enter number 2: 2
Enter number 3: 3
Enter number 4: 4
Enter number 5: 5
Items you have entered are:
1 Item is 1
2 Item is 2
3 Item is 3
4 Item is 4
5 Item is 5

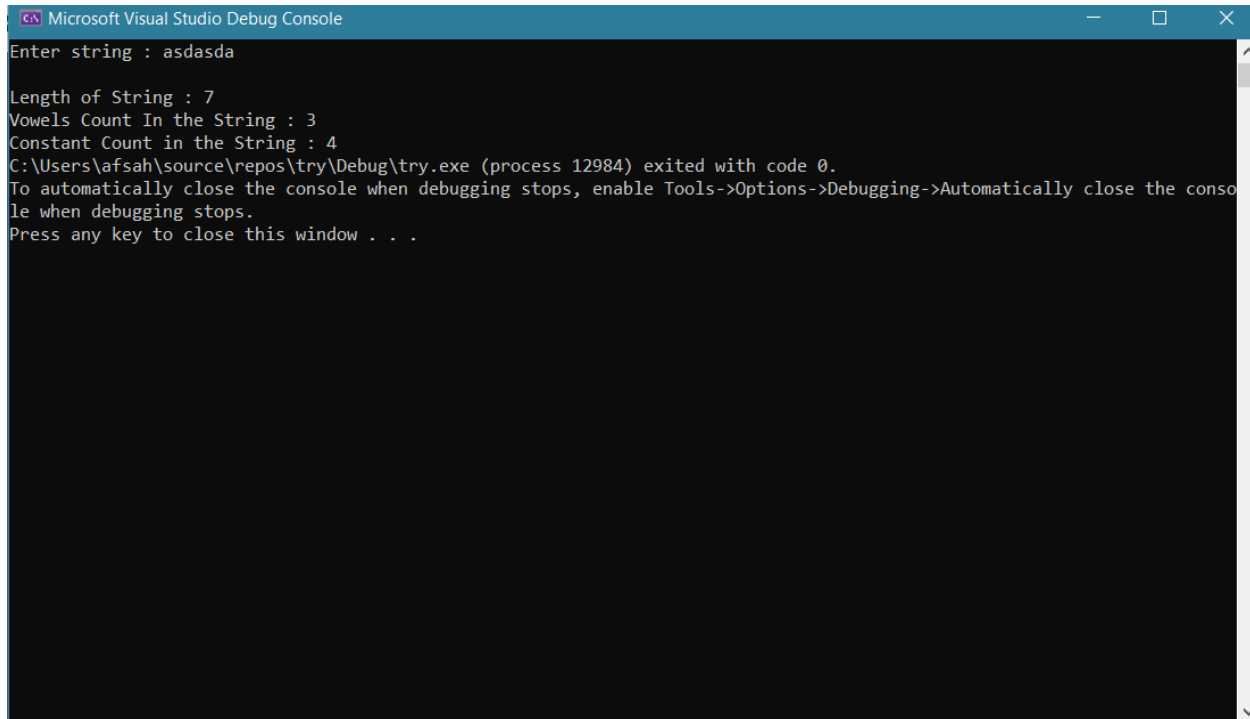
Sum of array elements :15
C:\Users\afsah\source\repos\maxPointer\Debug\maxPointer.exe (process 22492) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

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**Task#02**

Program that takes character array from user and output number of vowels using pointers.

1. Use while loop.



```
Microsoft Visual Studio Debug Console
Enter string : asdasda

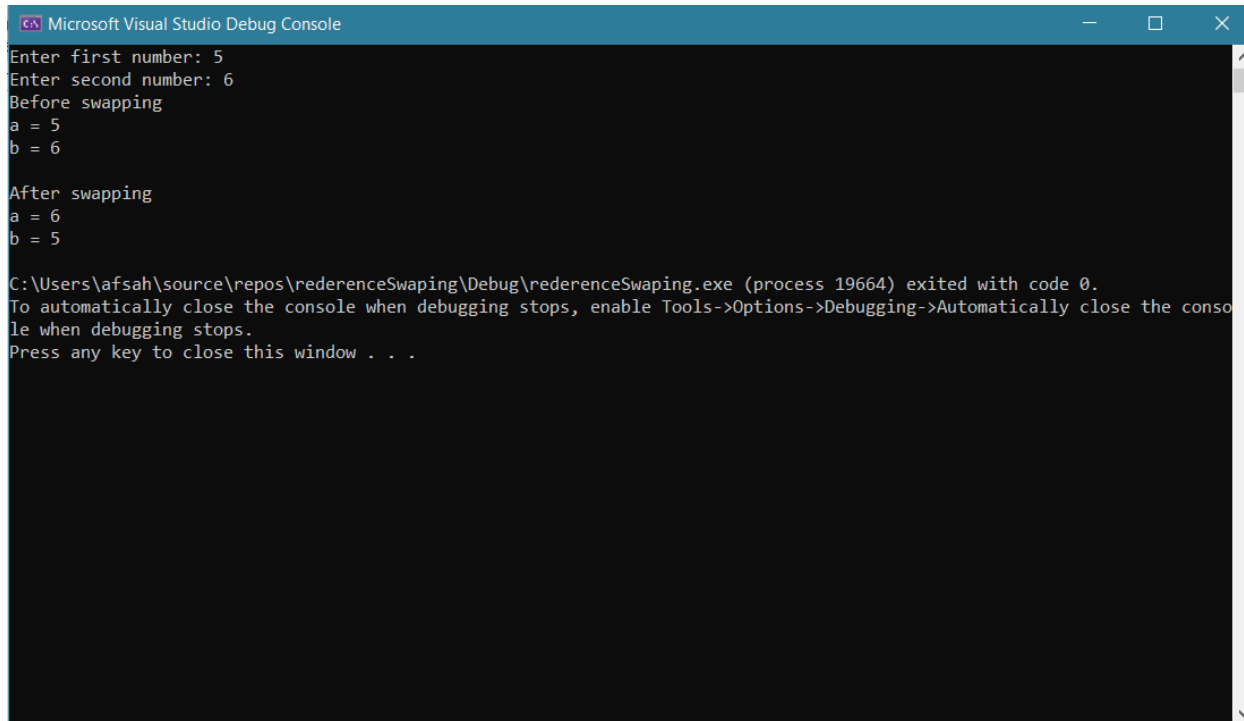
Length of String : 7
Vowels Count In the String : 3
Constant Count in the String : 4
C:\Users\afsah\source\repos\try\Debug\try.exe (process 12984) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

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**Task#03**

Write a function that swaps 2 numbers.

- a. Values should be passed by reference using pointers.



```
Microsoft Visual Studio Debug Console
Enter first number: 5
Enter second number: 6
Before swapping
a = 5
b = 6

After swapping
a = 6
b = 5

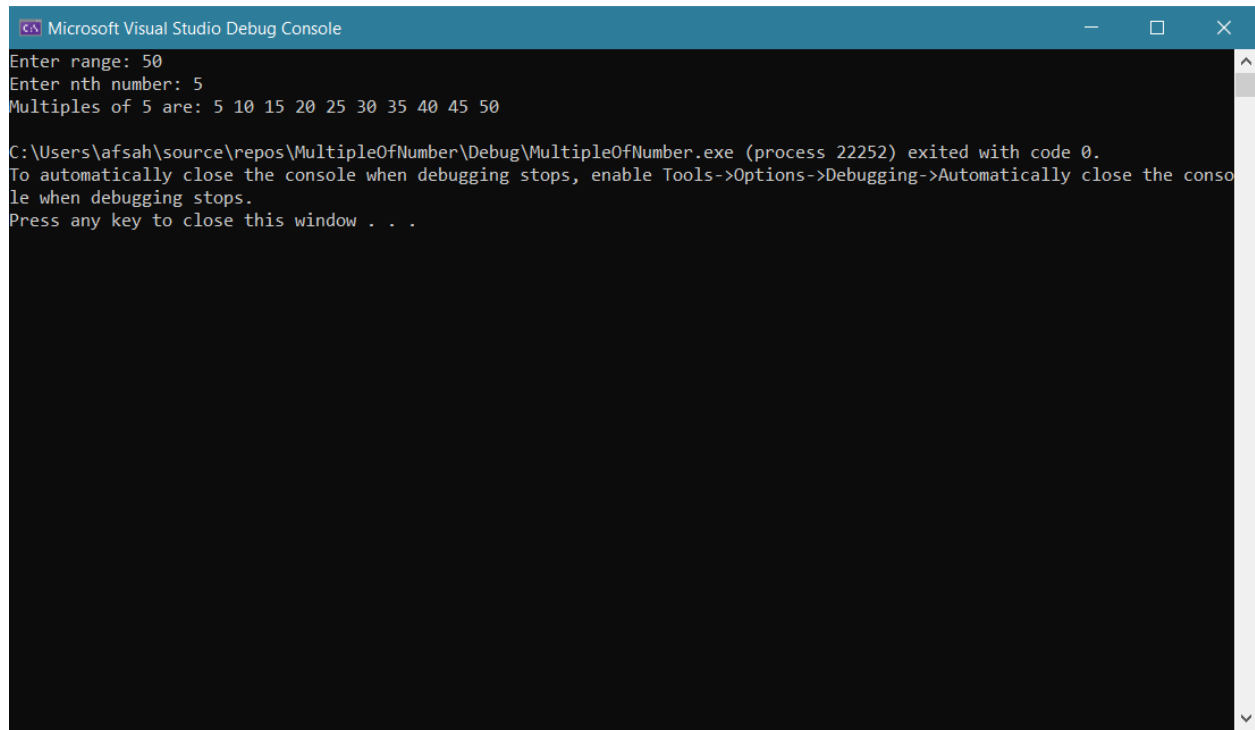
C:\Users\afisah\source\repos\referenceSwaping\Debug\referenceSwaping.exe (process 19664) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

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**Task#04**

Write a program with a function that find multiple(s) of number in a range given by user i.e.

- a. Takes input about form 1 to what number he wants to find multiples.
- b. Takes the number of whom he wants to search multiple(s).

A screenshot of the Microsoft Visual Studio Debug Console window. The window has a title bar with the text "Microsoft Visual Studio Debug Console" and standard window controls (minimize, maximize, close). The console output shows the following text: "Enter range: 50", "Enter nth number: 5", "Multiples of 5 are: 5 10 15 20 25 30 35 40 45 50", "C:\Users\afsah\source\repos\MultipleOfNumber\Debug\MultipleOfNumber.exe (process 22252) exited with code 0.", "To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.", and "Press any key to close this window . . .".

```
Microsoft Visual Studio Debug Console
Enter range: 50
Enter nth number: 5
Multiples of 5 are: 5 10 15 20 25 30 35 40 45 50

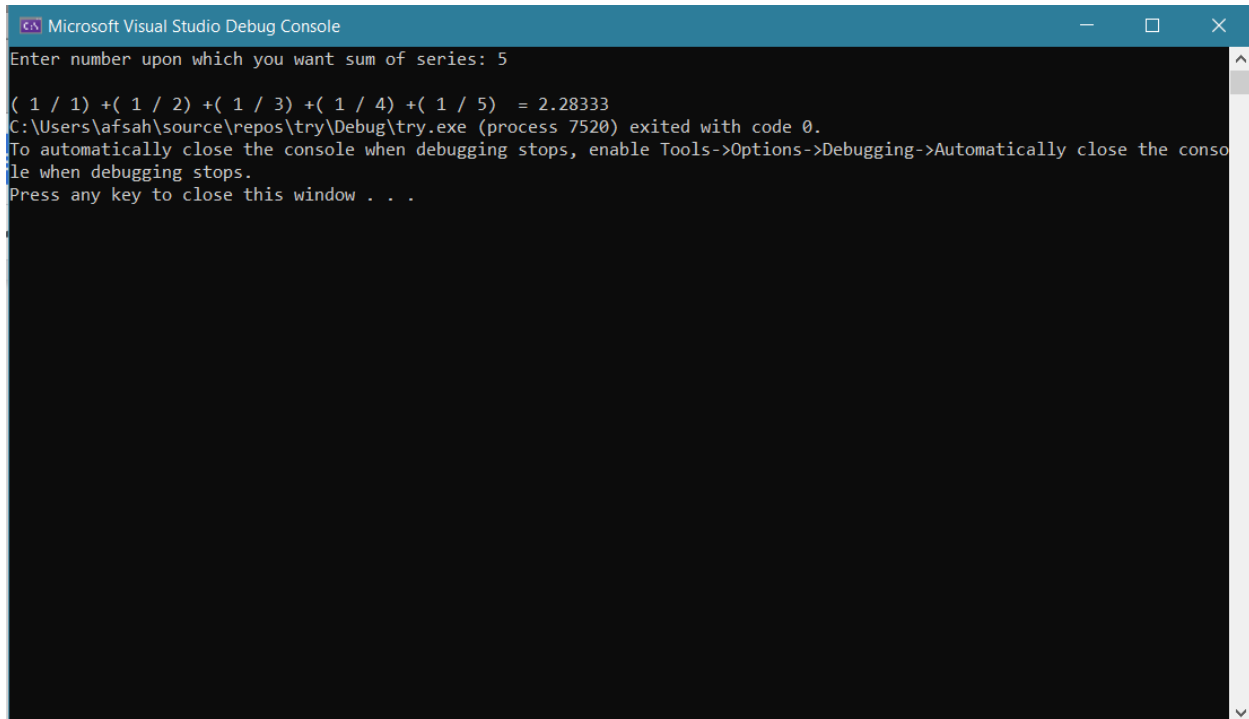
C:\Users\afsah\source\repos\MultipleOfNumber\Debug\MultipleOfNumber.exe (process 22252) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

### **Task#05**

Write a program with function that produces sum of the series:

$(1 / 1) + (1 / 2) + (1 / 3) + (1 / 4) + (1 / 5)$

1. User enters upon what number he wants sum of series.

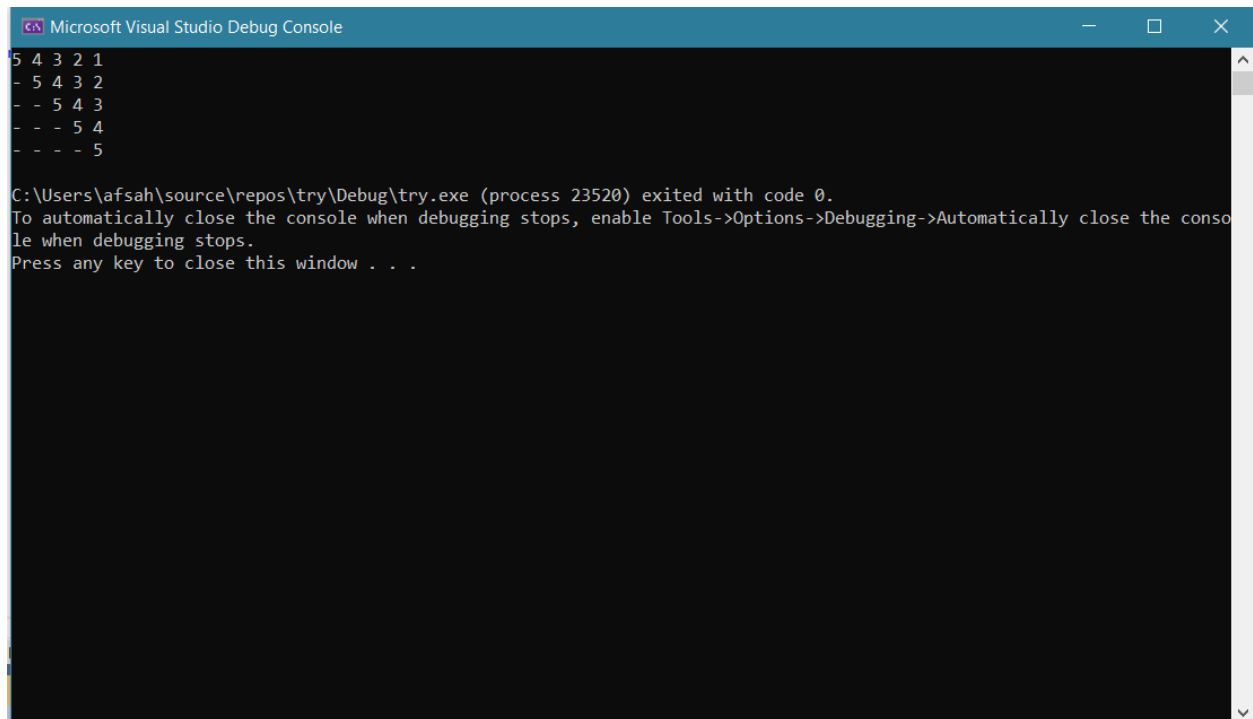


```
Microsoft Visual Studio Debug Console
Enter number upon which you want sum of series: 5
( 1 / 1) +( 1 / 2) +( 1 / 3) +( 1 / 4) +( 1 / 5) = 2.28333
C:\Users\afsah\source\repos\try\Debug\try.exe (process 7520) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

### **Task#06**

Write a program that prints following pattern:

```
5 4 3 2 1
- 5 4 3 2
- - 5 4 3
- - - 5 4
- - - - 5
```



```
Microsoft Visual Studio Debug Console

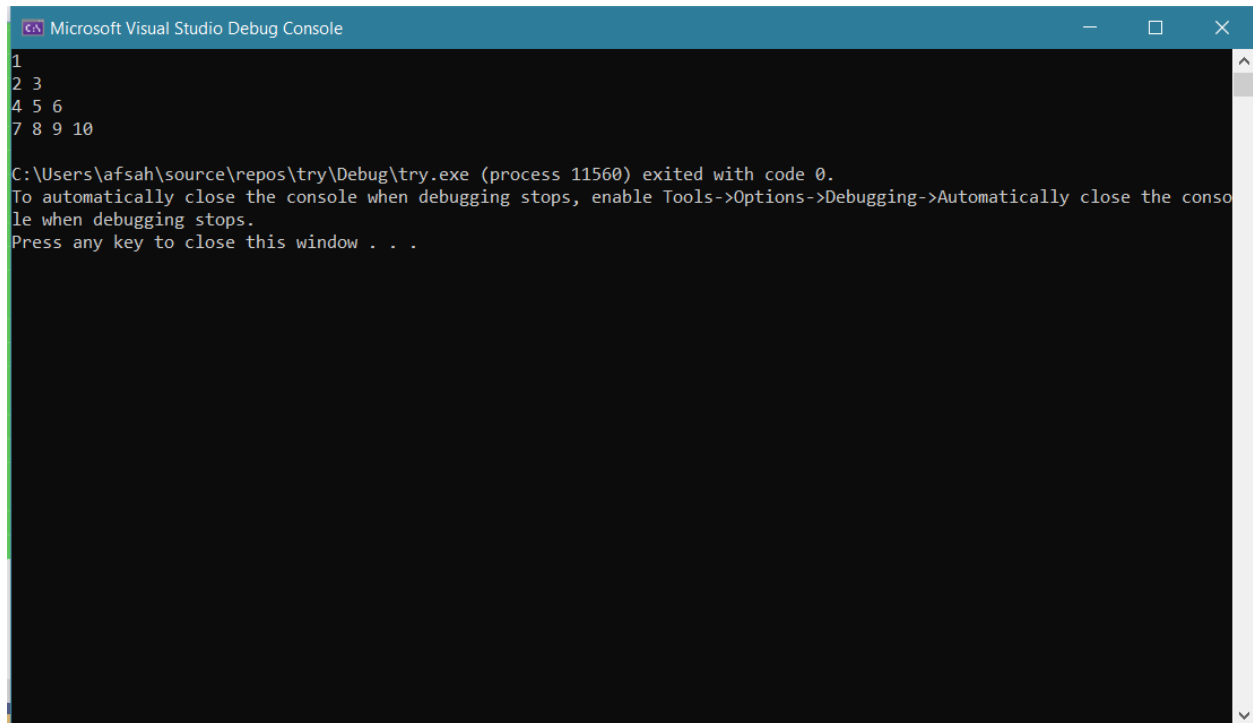
5 4 3 2 1
- 5 4 3 2
- - 5 4 3
- - - 5 4
- - - - 5

C:\Users\afisah\source\repos\try\Debug\try.exe (process 23520) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

### **Task#07**

Print following pattern.

```
1
2 3
4 5 6
7 8 9 10
```



The screenshot shows the Microsoft Visual Studio Debug Console window. The title bar is blue with the Visual Studio icon and the text "Microsoft Visual Studio Debug Console". The console area is black with white text. It displays the same pattern of numbers as shown in the previous block: 1, 2 3, 4 5 6, and 7 8 9 10. Below the pattern, it shows the message: "C:\Users\afisah\source\repos\try\Debug\try.exe (process 11560) exited with code 0." followed by instructions: "To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops." and "Press any key to close this window . . .".

```
Microsoft Visual Studio Debug Console
1
2 3
4 5 6
7 8 9 10

C:\Users\afisah\source\repos\try\Debug\try.exe (process 11560) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

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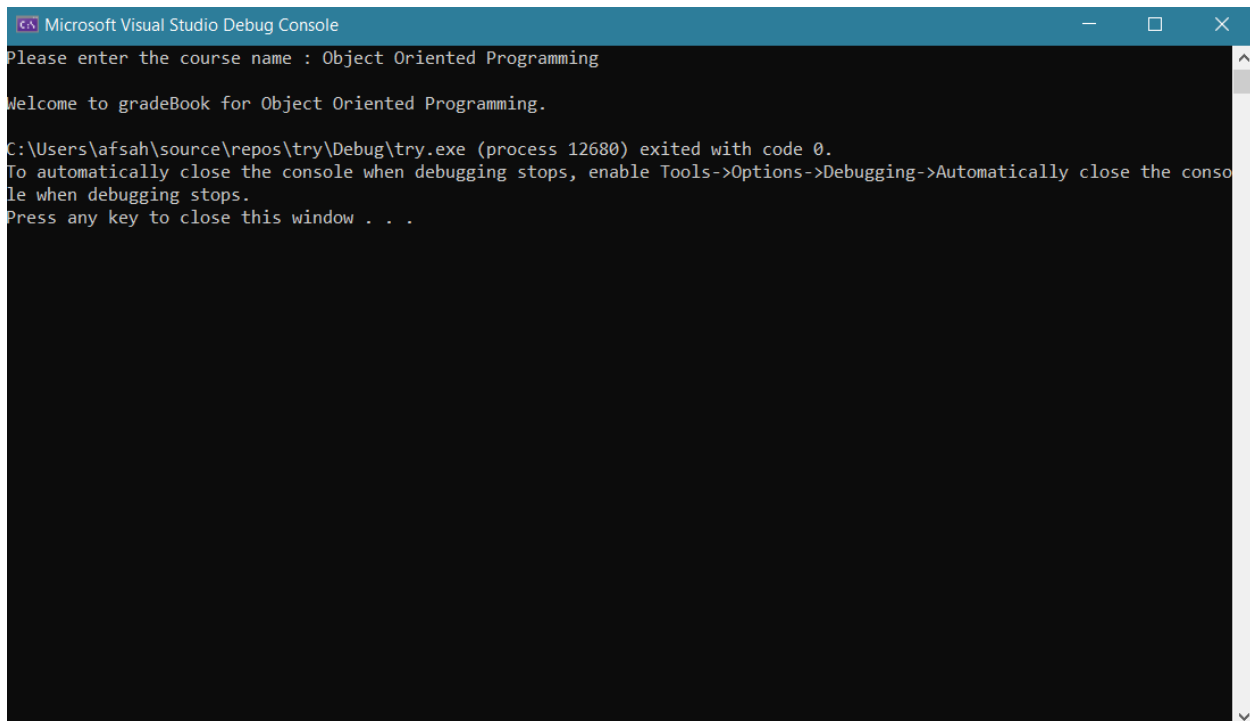
**Task#08**

Sample code of class that output course name.

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

class GradeBook
{
public:
    void displayMessage(string courseName)
    {
        cout << endl;
        cout << "Welcome to gradeBook for " << courseName<<". ";
        cout << endl;
    }
};

void main()
{
    GradeBook myGradeBook;
    string nameOfCourse;
    int marks;
    cout << "Please enter the course name : ";
    getline(cin, nameOfCourse);
    myGradeBook.displayMessage(nameOfCourse);
}
```



The screenshot shows the Microsoft Visual Studio Debug Console window. The title bar reads "Microsoft Visual Studio Debug Console". The console output is as follows:

```
Please enter the course name : Object Oriented Programming
Welcome to gradeBook for Object Oriented Programming.
C:\Users\afsah\source\repos\try\Debug\try.exe (process 12680) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```



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