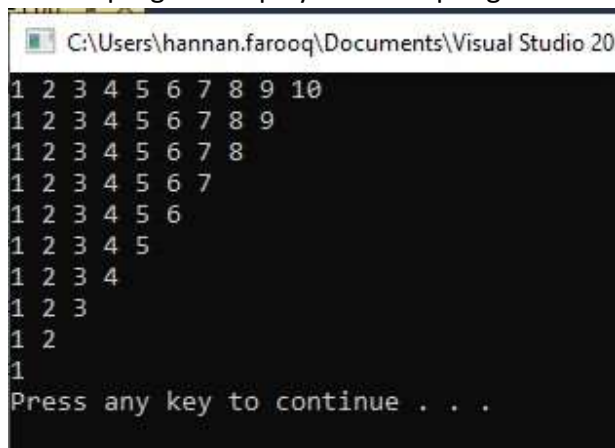


Objectives:

- Practice and understanding on basic c++ programs
- Control Structure(repetition)
- While loop statement
- Do-while loop statement
- Counter control loop variable
- Sentinel controlled loop
- Flag controlled loop
- Nested Loop

Problem: 1 | Nested Loop

Write a program display same output given below



```
C:\Users\hannan.farooq\Documents\Visual Studio 2017>
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8
1 2 3 4 5 6 7
1 2 3 4 5 6
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
Press any key to continue . . .
```

Problem: 2 | Nested Loop, Triangle variation 1

Make the following triangle with asterisk. Also, the size of the triangle will be defined by user For Example

```
C:\Users\hannan.farooq\Documents\Visual Studio 2013
Enter size of Triangle: 5
*
**
***
****
*****
Press any key to continue . . .
```

Problem: 3 | Nested Loop, Triangle variation 2

Make the following triangle with asterisk. Also, the size of the triangle will be defined by user For Example

```
C:\Users\hannan.farooq\Documents\Visual Studio 2
Enter size of Triangle:5
*****
****
***
**
*
Press any key to continue . . .
```

Problem: 4 | Nested Loop, Triangle variation 3

Make the following triangle with asterisk. Also, the size of the triangle will be defined by user For Example

```
C:\Users\hannan.farooq\Documents\Visual Studio 2013\P
Enter size of Triangle: 5
*
**
***
****
*****
Press any key to continue . . .
```

Problem: 5 | Nested Loop, Triangle variation 3

Make the following triangle with asterisk. Also, the size of the triangle will be defined by user For Example

```
C:\Users\hannan.farooq\Documents\Visual Studio 2013\Projects\Proj
Enter size of Triangle: 5
*****
****
***
**
*
Press any key to continue . . .
```

Problem: 6 | Switch Case, Nested Loop, Triangle Variation

Make a menu driven program that asks user for four triangle variations (P2, P3, P4 and P5) designed in previous problems and let the user switch between the options given by user.

Problem: 7 | Nested Loop, Pyramid

Make the following pyramid.

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

Also make inverted pyramid.

Problem: 8 |

(Diamond of Asterisks) Write a program that prints the following diamond shape. You may

use output statements that print a single asterisk (*), a single blank or a single newline. Maximize your use of repetition (with nested for statements) and minimize the number of output statements.

Note: The size of diamond should be user defined.

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

Problem: 9 |

Write a C++ program using while loop that will print the pattern as shown below 1

2= =1

3= =2= =1

4= =3= =2= =1

5= =4= =3= =2= =1

6= =5= =4= =3= =2= =1

7= =6= =5= =4= =3= =2= =1

8= =7= =6= =5= =4= =3= =2= =1

9= =8= =7= =6= =5= =4= =3= =2= =1