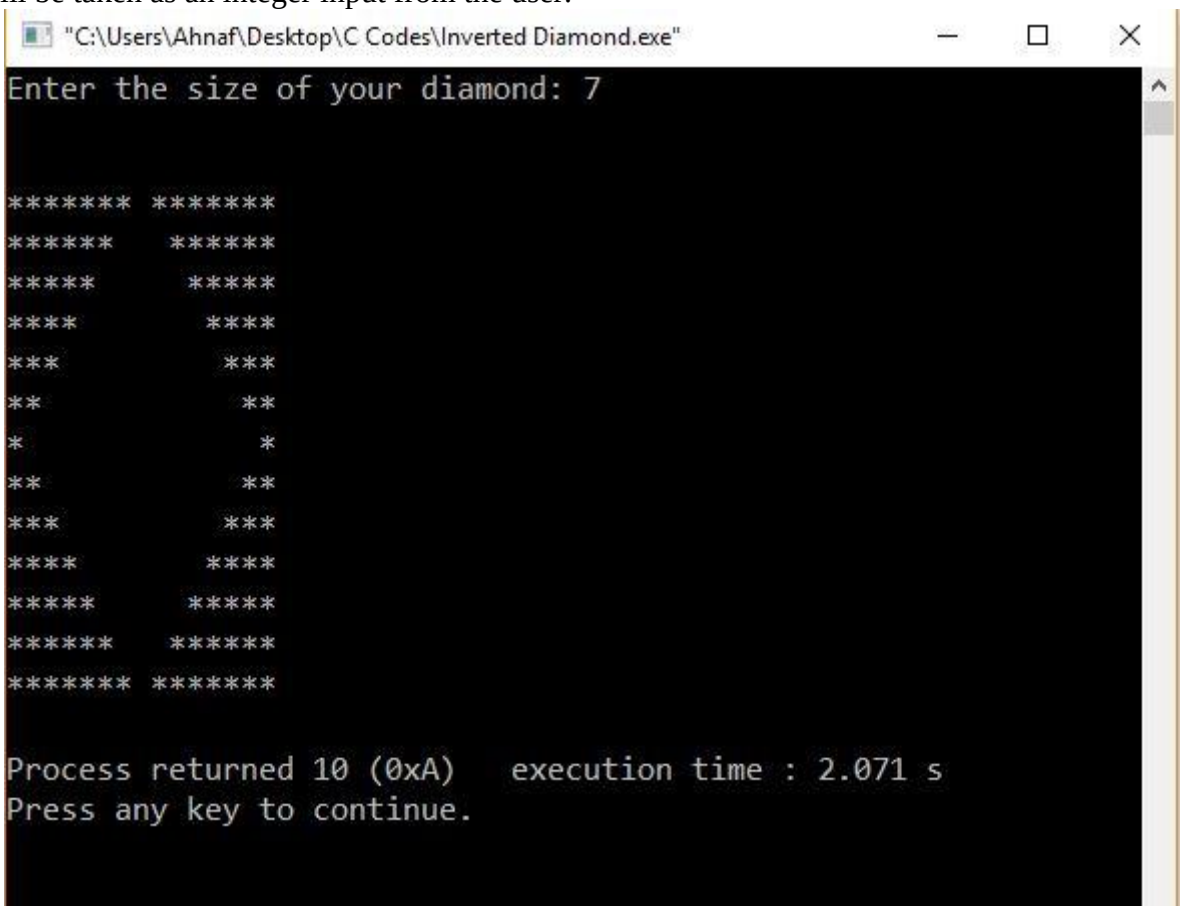
Lab 06 Tasks

Q1. Write a program that will print the following diamond shape. The size of the diamond will be taken as an integer input from the user.



Q2. Build a simple calculator that can perform addition, subtraction, multiplication, division, square, square-root operations. The main menu of the calculator will contain the following options:

1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Square
6. Square-Root
7. Exit

From this menu, the user will select any one of the options to go the menu for that operation. For the addition, subtraction, multiplication, division operations the user need to provide 2 inputs (input). After taking the first input the user can either enter the second input or press 'C' or 'c' to give the first input again. Since only one input is required from Square and Square-Root operations, no such options will be available for them. After showing the result the user will enter another input (character). If the input is 'B' or 'b' the program will show the main menu again. The program will exit for every other input.

You must use switch case to select any of the options from the main menu. All 6 mathematical operations must be written in separate functions.

Q3. Your program will contain the functions void fibonacci(int len) and int isprime(int num). The main function will take an input (n) from the user and call the fibonacci() function with the input (n) as the argument. The fibonacci() function will print only the Fibonacci numbers that are between the 1st and nth position in the Fibonacci series and also a prime. The fibonacci series will call the isprime() function to check whether a number is prime or not. (Use the return value from the isprime() function to determine if a number is prime or not prime).