Week 0.1: Extra Assignments

1. Read the word "Crossroads" from the user and Print the word "Crossroads" Less Than 8 times without using any loop or goto statement.

Code of the program & screenshot of the output.

2. Write a Program for pattern shown below

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

Code of the program & screenshot of the output.

3. Write a program to compare two strings without using string functions.

Code of the program & screenshot of the output.

4. Write a menu driven program to perform following Operations without using Library functions.

    1. STRING LENGTH
    2. STRING CONCATENATION
    3. STRING REVERSE

    A. The program should not end until the user exits the program by giving an input to the program to exit. The menu Should contain an option to exit.
    B. The program should Contain 4 Functions Excluding main():

        a. STRINGLENGTH()
        b. STRINGCONCATENATION()
        c. STRINGREVERSE()
        d. EXIT()

Code of the program & screenshot of the output.

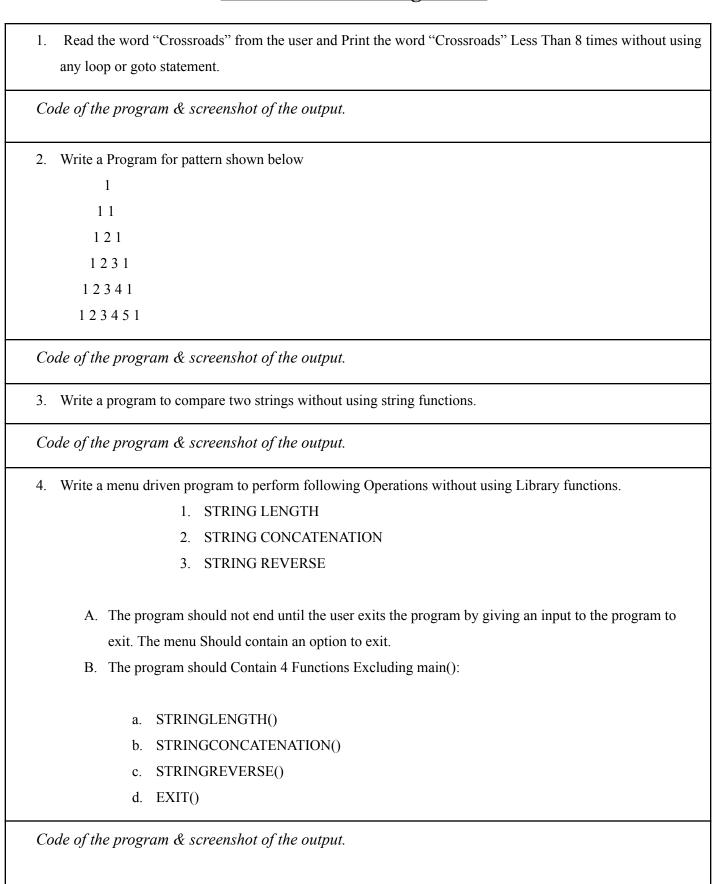5. Write a Program to copy one string to another without using String Functions?

Code of the program & screenshot of the output.

6. Read some Malayalam Movie Names from User And Sort it?

Code of the program & screenshot of the output.

7. Write a program to read the string "India is my country" from the user and find the position of the word "is"?

Code of the program & screenshot of the output.

8. Read random numbers [22,87,178,34,10,45,22,89,31] from user and sort numbers in descending Order?

Code of the program & screenshot of the output.

9. Read a character from the user and find the ASCII code of that character?

Code of the program & screenshot of the output.

10. Write a program to print the following pattern

```
    A
   A B A
  A B C B A
 A B C D C B A
```

Code of the program & screenshot of the output.

11. Read some numbers from the user and find the repeating numbers?

Eg:

Input   : 2 9 4 6 9 4

Output   : 9 4

Code of the program & screenshot of the output.

12. Read a line of text from the user , Find the number of Alphabets, Digits and Special characters?

Eg,

        Input   : hello, Welcome to District B-13

        Output   :-

                Number of Alphabets in the string is : 23

                Number of Digits in the string is : 2

                Number of Special characters in the string is : 7

Code of the program & screenshot of the output.

13. Read random numbers from the user, find the maximum number in the list of numbers?
    a. Use at least one function
    b. The function should return a value to main function

Code of the program & screenshot of the output.

14. Read a random number (n) from the user and Generate n^{th} Fibonacci
    a. Must use Recursion

Code of the program & screenshot of the output.

15. Write a program to print following pattern

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

Code of the program & screenshot of the output.

16. It's your first day at school. Your teacher asked the students to meet every other student in the class and to introduce themselves. The teacher asked them to do handshakes when they meet each other.

If there are n number of students in the class then find the total number of handshakes made by the students.

Program to find the maximum number of handshakes is discussed here. Given a positive integer n, find out the total number of handshakes possible.

Eg,

Input   : 15   // Total Number of students

Output   :105   //Maximum Number of Handshakes

Code of the program & screenshot of the output.

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17. Read two numbers from the user and swap those two numbers using Pointer.

Code of the program & screenshot of the output.

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18. Convert the lowercase characters in a word into uppercase

Eg,

Input   : Hello

Output   : HELLO

Code of the program & screenshot of the output.

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19. Write a program to calculate the charge for parcel:

If the weight of the parcel is less than 500gm or equal to 500gm then the parcel charge will be Rs. 200, Otherwise there is an additional charge of Rs.170 per each extra 500gm

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Code of the program & screenshot of the output.

20. Write a program to perform the following calculation:

    a. Matrix addition

    b. Matrix multiplication

    c. Matrix subtraction

    d. Matrix transpose

- Program should be a menu driven program.
- Program should have Functions with arguments and Return Value.
  - List Functions:
    - matrix_addition()
    - matrix_multiplication()
    - matrix_subtraction()
    - matrix_transpose()
    - exit()
- Do not exit the program until the user enters the input to exit the program.

Code of the program & screenshot of the output.