**Assignment-1**

**CS F214**

**Logic in Computer Science**

**Total Weightage = 8% Marks = 24**

**General Instructions:**

* The assignment is divided into four days. You need to create separate functions for each day.
* Function signatures and the main function will be given to you. You just need to write the function definitions and upload it.
* Your code will be tested with the given main function for each day.
* **You should strictly follow the filename nomenclature for each day.**
* For each day, the main file is named as “main\_No.c” and the header file is named as “dayNo.h”. (eg: “main\_1.c” and “day1.h”). You will create a new program file for each day and save it as “dayNo.c” (e.g. day1.c).
* If you fail to submit any task before the deadline, you can continue with the next task but you won’t be given marks for the task you didn’t complete.
* Include appropriate header files in your code whenever necessary.
* You should comment your code properly.
* **Assignment should be done sitting in Systems Lab or Data Science (I014 and I015) labs only.**
* The connective symbols you will use for this assignment is as follows.

1. ~ for negation

2. V for OR

3. ^ for AND

4. > for implication.

**Other Important Instructions:**

* Please work as a team. There should be **only one submission per team**.
* **Do not share your code with other team members. Copied codes will be awarded zero marks for the entire assignment. Expecting all of you to be honest.**

**Definition of Propositional Logic Formula-**

<statement> ::= p | (¬p) |( ~(<statement>)) | (<statement> ∧ <statement>) | (<statement> ∨ <statement>) |

(<statement> > <statement>)

**Day 1  (14th Oct 2019)**

**Marks = 4**

Learn how to initialize a stack to store characters. Implement the follow operations in stack through separate functions:

1. push(x)
2. pop()
3. isEmpty()
4. isFull()
5. top()

Your code should comply with the main function.

The filename of the header file will be “day1.h”. The “day1.h” code is given to you. Please use these function signatures only.

**Create a separate file - “day1.c” where you will write all the function definitions.**

The “main\_1.c” is the main file to test your code. Use it to test your code.

**Make sure in all files you have put all the group members’ name along with group ID.**

Input -

MAX, the first line contains the maximum number of elements in the stack.

N, the second line contains the number of operations user wants to execute.

The next N lines contain various choice of operations ranging from 1 to 5 as mentioned above.

For push operation, your code should take a character as input.

Output -

Your function should generate appropriate outputs for isEmpty(), isFull() and top() functions.

Sample Test Case -

Input -

10

8

1 a

1 b

1 c

2

3

4

5

1 d

Output -

false

false

b