Lab # 12

# OBJECTive

To understand the concept of the stack in assembly language

**Stack**

A stack is an array-like data structure in the memory in which data can be stored and removed from a location called the 'top' of the stack. The data that needs to be stored is 'pushed' into the stack and data to be retrieved is 'popped' out from the stack. Stack is a LIFO data structure, i.e., the data stored first is retrieved last.

Stack is one dimensional data structure. Items are added and removed from one end of the structure; that is, it is processed in a “last in first out” manner. The most recent addition to the stack is called the top of the stack.

Assembly language provides two instructions for stack operations: PUSH and POP.

**PUSH**

To add a new word to stack we **PUSH** it on. The syntax is

PUSH source

Where source is a16-bit register or memory word. For example

PUSH AX.

**POP**

To remove the top item from the stack, we **POP** it. The syntax is

POP destination

Where destination is a 16-bit register (except IP) or memory word. For example

POP DX

**EXERCISE:**

Write a program that takes sequence of characters as input and display it in reverse order in new line. Output will be:

User Input: SSUET

User Input in reverse order: TEUSS.