Lecture 23

alisoomro666@gmail.com

Stack, PUSH, POP and Example Program of Push and Pop

A stack is a data structure that works on LIFO principle

How to add value to stack and take out ?

Copies content from Operand to top of stack

PUSH Register/Variable

PUSH AX

PUSH Var1

> 16 bits

~~Push Al~~

~~Pop al~~

Pop Register/Variable

Copies content from top of stack to Operand

POP AX

POP Var1

What's the use of Stack in Computer Science?

1. Undo/Redo
2. Back/Forward
3. Solving mathematical problems with precedence

Why do we study Stack in Assembly Language ?

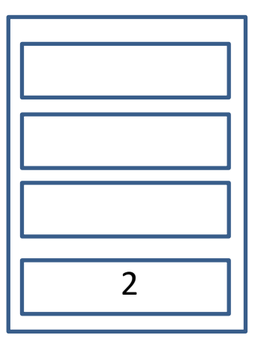
1. Swap two numbers
2. To reverse a string
3. Helps in Nested Loops (Loop within loop)

```
.MODEL SMALL
.STACK 100H
.DATA
.CODE
MAIN PROC

mov AX, 2

PUSH AX

POP AX

mov DX, AX
mov ah, 2
Int 21h


mov AH, 4CH
INT 21H
MAIN ENDP
END MAIN
```

Stack Pointer Register
Point the top of space reserved for stack

SS : SP

Stack Segment Register
Hold address of space reserved for stack



How to use stack in assembly program?

.stack 100h

It's a directive/command that reserves 100h bytes for stack

Last In, first out (LIFO)

PUSH → Rakhna

POP → Nikalna