# Basic CPU Programming

Introduction

What is a stack?

- Stack is a data structure used to store a collection of objects.
- Each running program will have a stack and it grows and shrinks during calls to functions.
- Individual items can be added and stored in a stack using a `push` operation and objects can be retrieved from the stack using `pop` operation.
- When an object is added to a stack, it is placed on the top of all previously entered items. When an item is removed it can be either removed from the top or bottom of the stock.
- A stack in which items are removed from top is considered as "LIFO" (Last In, First Out). When items are removed from bottom it is called as "FIFO" (First In, First Out).

Stack Example
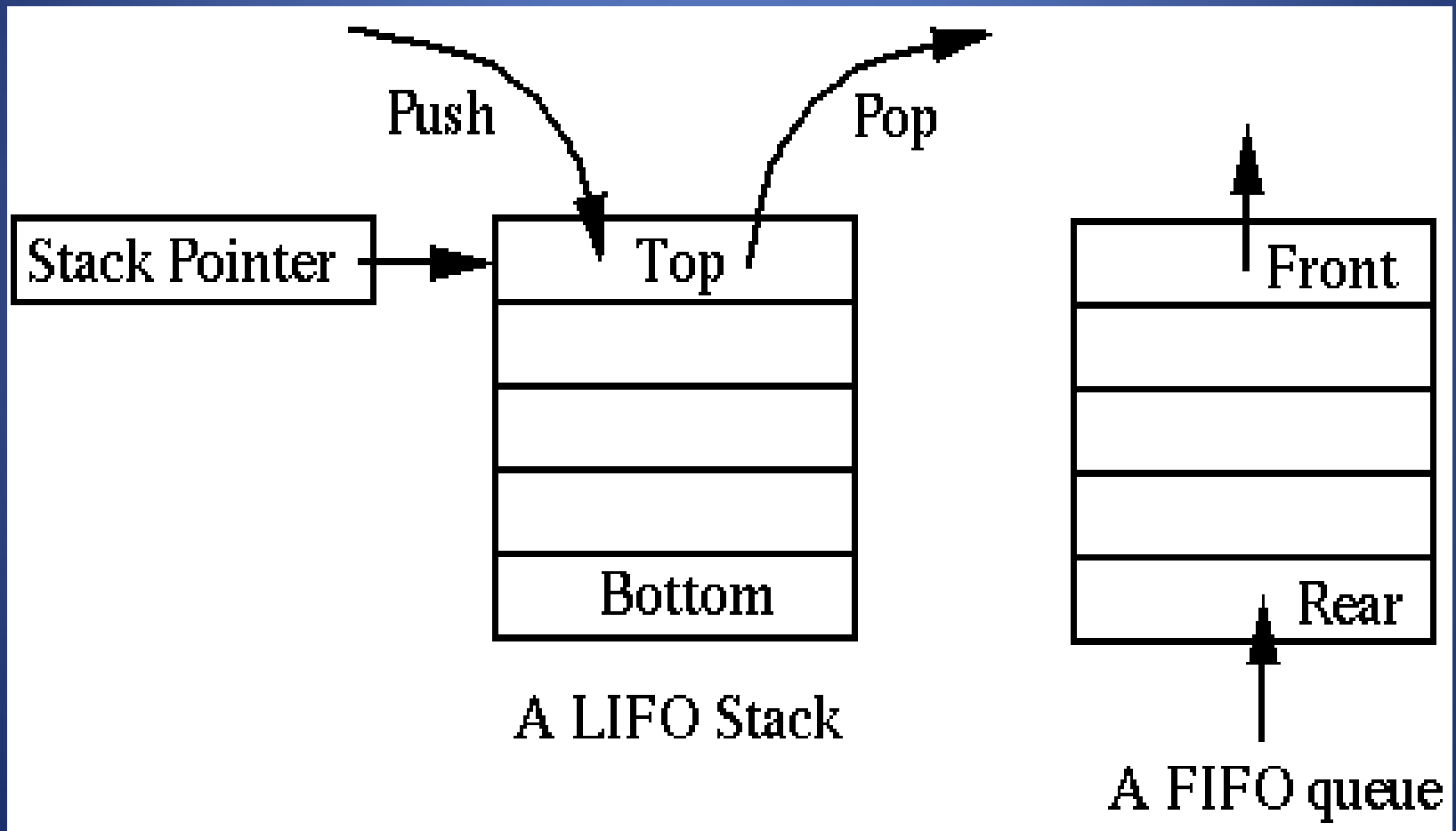
What are stacks used for?

- There are only two basic operations on stack they were push, pop and they were used for the following things.

- Stacks are used to keep track and implement functions in a program.

- In general, stacks are useful for processing nested structures or for functions which call other functions.

- Handling branching processes.

- Evaluating Arithmetic expressions.

- used to alter the order of things. It is a powerful property.