

1 Stack

DataStructure

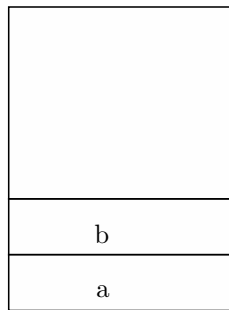
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This is a famous example of using STACK as a DataStructure, mainly, Evaluation of different expressions.

- infix $a/b-c+d*e-a*c$
- postfix $ab/c-de*+ac*-$
- prefix $-+-/abc*de*ac$

1.1 Evaluate Prefix Expression Using Stack

a b / c - d e * + a c * -



Take every element to the stack, and evaluate whenever operation comes.

2 Queue

Queue has FIFO structure, that is, first element that got in get to go out first.

- **Objects** : a finite ordered list of elements
- Functions
 - Queue Create(max size)
 - Boolean IsFull(Queue *Q)
 - Boolean IsEmpty(Queue *Q)
 - Boolean Add(Queue *Q, Element)
 - Boolean Delete(Queue *Q, Element)
- null

```
Queue Create(100)
typedef struct{
    int item[100];
    int front = -1;
    int rear = -1
} Queue;
Queue Q;
Isfull(&Q);
```

```
boolean Is Full(Queue *pQ){
return (pQ-> rear == 99);
}
```

```
boolean IsEmpty(Queue *pQ){
return()
}
```