Praktikum Pemrograman 1

Laporan Pertemuan 10

Stack

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https://github.com/FawwasSabil25/PP1_223040114_Pertemuan10.git

- StrukturStak.java

src > Pertemuan10 > StrukturStack.java > StrukturStack

```java
package Pertemuan10;

public class StrukturStack {

    private int [] array;
    private int capacity;
    private int TOP;
    private int temp;

    public final int MIN = -1;

    public StrukturStack(int capacity){
        super();
        array = new int[capacity];
        this.capacity = capacity;
        TOP = MIN;
    }

    public boolean isEmpty(){
        return (TOP == MIN); //mengecheck apakah Stack Kosong?
    }

    public boolean isFull(){
        return (TOP == capacity - 1); //mengecheck apakah stack penuh?
    }

    public int Size(){
        return TOP + 1; //mencari TOP (nilai) paling atas dari stack
    }
```

```java
public class StrukturStack {

    public void Push(int data){ //fungsi untum memasukkan nilai ke stack
        if(isFull()){
            System.out.println(x:"Stack Penuh");
        }else{
            TOP++; //akan selalu terisi dari atas (menimpa)
            array[TOP] = data; //data yang diinput akan menjadi yg paling atas
        }
    }

    public int Pop(int data){ //fungsi untuk mengeluarkan nilai dari stak (dari atas)
         if(isEmpty()){
            System.out.println(x:"Stack Kosong");
         }else{
            temp = array[TOP]; //nilai paling atas (TOP) akan menjadi temp
            TOP = TOP -1; //TOP akan diturunkan
         }
         return temp;
    }

    public void DisplayElement(){ //fungsi menampilkan semua elemen dalam stack
        System.out.println(x:"Element from TOP : ");
        if(isEmpty()){
            System.out.println(x:"Stack Kosong");
        }else{
            for(int i = TOP; i >= 0; i--){ //menampilkan i(elemen) hanya ketika i > 0 dan akan mencari dari TOP
                System.out.println(array[i] + " ");
            }
        }
    }
```

```java
    public int top(){ //fungsi untuk menampilkan elemen pertama dari atas (TOP)
        if(isEmpty()){
            return -1;
        }
        return array[TOP];
    }
}

```

- StackMain.java

```java
package Pertemuan10;

public class StackMain {
    Run | Debug
    public static void main(String[] args) {
        StrukturStack Stack = new StrukturStack(capacity:3);

        //sebelum push
        System.out.println(x:"\n ##sebelum push");
        System.out.println("Size :" + Stack.Size());
        System.out.println("Empty : " + Stack.isEmpty());
        System.out.println("Full : " + Stack.isFull());
        System.out.println("TOP : " + Stack.top());

        //sesudah push
        System.out.println(x:"\n ##melakukan push 3x");
        Stack.Push(data:2);
        Stack.Push(data:4);
        Stack.Push(data:1);
        System.out.println("Size :" + Stack.Size());
        System.out.println("Empty : " + Stack.isEmpty());
        System.out.println("Full : " + Stack.isFull());
        System.out.println("TOP : " + Stack.top());
        Stack.DisplayElement();
```

- Latihan Sebelum dan sesudah push

```
 ##sebelum push
Size :0
Empty : true
Full : false
TOP : -1

 ##melakukan push 3x
Size :3
Empty : false
Full : true
TOP : 1
Element from TOP :
1
4
2
```

```
            //sesudah di pop
            System.out.println( x:" \n ##sesudah melakukan  Satu Kali");
            Stack.Pop(data:0);
            System.out.println("Size :" + Stack.Size());
            System.out.println("Empty : " + Stack.isEmpty());
            System.out.println("Full : " + Stack.isFull());
            System.out.println("TOP : " + Stack.top());
            Stack.DisplayElement();

            //sesudah di pop semua
            System.out.println(x:"\n ##sesudah di pop semua");
            Stack.Pop(data:0);
            Stack.Pop(data:0);
            Stack.Pop(data:0);
            System.out.println("Size :" + Stack.Size());
            System.out.println("Empty : " + Stack.isEmpty());
            System.out.println("Full : " + Stack.isFull());
            System.out.println("TOP : " + Stack.top());
            Stack.DisplayElement();
    }
```

- Latihan Pop

```
 ##sesudah melakukan Pop Satu Kali
Size :2
Empty : false
Full : false
TOP : 4
Element from TOP :
4
2

 ##sesudah di pop semua
Stack Kosong
Size :0
Empty : true
Full : false
TOP : -1
Element from TOP :
Stack Kosong
```