LAPORAN PRAKTIKUM

PERTEMUAN 7

STACK

Nama :

GHAZA ZIDANE NURRAIHAN (2311104038)

Dosen :

Yudha Islami Sulistya, S.Kom., M.Cs

PROGRAM STUDI S1 REKAYASA PERANGKAT LUNAK

FAKULTAS INFORMATIKA

TELKOM UNIVERSITY PURWOKERTO

2024

TP

stack.h

```h
TP > C Stack.h > ...
#ifndef STACK_H
#define STACK_H

typedef char infotype;

struct stack {
    infotype info[15];
    int Top;
};

void createStack_2311104038(stack &S);
bool isEmpty_2311104038(stack S);
bool isFull_2311104038(stack S);
void push_2311104038(stack &S, infotype x);
int pop_2311104038(stack &S);
void printInfo_2311104038(stack S);

#endif
```

Stack.cpp

```cpp
#include <iostream>
#include "stack.h"
using namespace std;

void createStack_2311104038(stack &S) {
    S.Top = 0;
}

bool isEmpty_2311104038(stack S) {
    return S.Top == 0;
}

bool isFull_2311104038(stack S) {
    return S.Top == 15;
}

void push_2311104038(stack &S, infotype x) {
    if (!isFull_2311104038(S)) {
        S.Top++;
        S.info[S.Top - 1] = x;
    } else {
        cout << "Stack penuh!" << endl;
    }
}

int pop_2311104038(stack &S) {
    if (!isEmpty_2311104038(S)) {
        infotype x = S.info[S.Top - 1];
        S.Top--;
        return x;
    } else {
        cout << "Stack kosong!" << endl;
        return -1;
    }
}

void printInfo_2311104038(stack S) {
    if (isEmpty_2311104038(S)) {
        cout << "Stack kosong!" << endl;
    } else {
        for (int i = S.Top - 1; i >= 0; i--) {
            cout << S.info[i] << " ";
        }
        cout << endl;
    }
}
```

Main.cpp

```cpp
#include <iostream>
#include "stack.h"
using namespace std;

void fillStack_2311104038(stack &S, int nim_last_digit) {
    const char* str;

    switch (nim_last_digit % 4) {
        case 0:
            str = "IFLABJAYA";
            break;
        case 1:
            str = "HALOBANDUNG";
            break;
        case 2:
            str = "PERCAYADIRI";
            break;
        case 3:
            str = "STRUKTURDATA";
            break;
        default:
            str = "";
            break;
    }

    for (int i = 0; str[i] != '\0'; i++) {
        push_2311104038(S, str[i]);
    }
}

void printInfo(stack S) {
    if (isEmpty_2311104038(S)) {
        cout << "Stack kosong!" << endl;
    } else {
        for (int i = 0; i < S.Top; i++) {
            cout << S.info[i] << " ";
        }
        cout << endl;
    }
}
```

Kode lanjutannya

```cpp
int main() {
    stack S;
    createStack_2311104038(S);

    int nim_last_digit;
    cout << "Masukkan digit terakhir NIM: ";
    cin >> nim_last_digit;

    fillStack_2311104038(S, nim_last_digit);

    cout << "Output:" << endl;
    printInfo_2311104038(S);

    cout << "Isi stack sesudah pop:" << endl;
    for (int i = 0; i < 4 && !isEmpty_2311104038(S); i++) {
        pop_2311104038(S);
    }

    printInfo_2311104038(S);

    return 0;
}
```

```
Masukkan digit terakhir NIM: 0
Output:
A Y A J B A L F I
Isi stack sesudah pop:
B A L F I
PS C:\Users\VICTUS\OneDrive\LAPRAK STD\STD_Ghaza_Zidane_Nurraihan_2311104038\07_Stack\tp> ./stack_program
```

```
PS C:\Users\VICTUS\OneDrive\LAPRAK STD\STD_Ghaza_Zidane_Nurraihan_2311104038\07_Stack\tp> ./stack_program
Masukkan digit terakhir NIM: 1
Output:
G N U D N A B O L A H
Isi stack sesudah pop:
N A B O L A H
```

```
PS C:\Users\VICTUS\OneDrive\LAPRAK STD\STD_Ghaza_Zidane_Nurraihan_2311104038\07_Stack\tp> ./stack_program
Masukkan digit terakhir NIM: 2
Output:
I R I D A Y A C R E P
Isi stack sesudah pop:
A Y A C R E P
```

```
PS C:\Users\VICTUS\OneDrive\LAPRAK STD\STD_Ghaza_Zidane_Nurraihan_2311104038\07_Stack\tp> ./stack_program
Masukkan digit terakhir NIM: 3
Output:
A T A D R U T K U R T S
Isi stack sesudah pop:
R U T K U R T S
```