

# **LAPORAN PRAKTIKUM**

## **PERTEMUAN 7**

### **STACK**



**Nama :**

RIFKI TAUFIKURROHMAN (2311104033)

**Dosen :**

YUDHA ISLAMI SULISTYA, S.Kom., M.Cs.

**PROGRAM STUDI S1 REKAYASA PERANGKAT LUNAK**

**FAKULTAS INFORMATIKA**

**TELKOM UNIVERSITY PURWOKERTO**

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## **SOAL TP**

1. Soal 1 TP

```

#include <iostream>

using namespace std;

#define MAX_SIZE 15

struct stack {
    char info[MAX_SIZE];
    int top;
};

void createStack(stack &S) {
    S.top = -1;
}

bool isFull(stack S) {
    return S.top == MAX_SIZE - 1;
}

void push(stack &S, char x) {
    if (isFull(S)) {
        cout << "Stack overflow" << endl;
    } else {
        S.top++;
        S.info[S.top] = x;
    }
}

bool isEmpty(stack S) {
    return S.top == -1;
}

void pop(stack &S) {
    if (!isEmpty(S)) {
        S.top--;
    }
}

void printStack(stack S) {
    if (isEmpty(S)) {
        cout << "Stack kosong" << endl;
    } else {
        for (int i = 0; i <= S.top; i++) {
            cout << S.info[i] << " ";
        }
        cout << endl;
    }
}

void popMultiple(stack &S, int count) {
    for (int i = 0; i < count; i++) {
        if (!isEmpty(S)) {
            pop(S);
        }
    }
}

int main() {
    stack S;
    createStack(S);

    string NIM = "12345678";
    int lastDigit = NIM[NIM.length() - 1] - '0';

    cout << "Digit terakhir NIM MOD 4 sisa " << lastDigit % 4 << " : " <<
endl; if (lastDigit % 4 == 0) {
    // I F L A B J A Y A
    push(S, 'I');
    push(S, 'F');
    push(S, 'L');
    push(S, 'A');
    push(S, 'B');
    push(S, 'J');
    push(S, 'A');
    push(S, 'Y');
    push(S, 'A');

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

    popMultiple(S, 5);
    printStack(S);

} else if (lastDigit % 4 == 1) {
    push(S, 'H');
    push(S, 'A');
    push(S, 'L');
    push(S, 'O');
    push(S, 'B');
    push(S, 'A');
    push(S, 'N');
    push(S, 'D');
    push(S, 'U');
    push(S, 'N');
    push(S, 'G');

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

    popMultiple(S, 4);
    printStack(S);

} else if (lastDigit % 4 == 2) {
    push(S, 'P');
    push(S, 'E');
    push(S, 'R');
    push(S, 'C');
    push(S, 'A');
    push(S, 'Y');
    push(S, 'A');
    push(S, 'D');
    push(S, 'I');
    push(S, 'R');
    push(S, 'I');

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

    popMultiple(S, 7);
    printStack(S);

} else if (lastDigit % 4 == 3) {
    push(S, 'S');
    push(S, 'T');
    push(S, 'R');
    push(S, 'U');
    push(S, 'K');
    push(S, 'T');
    push(S, 'U');
    push(S, 'R');
    push(S, 'D');
    push(S, 'A');
    push(S, 'T');
    push(S, 'A');

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

    popMultiple(S, 8);
    printStack(S);

}

return 0;
}

```

Hasil Kode :

```
Output:  
I F L A B J A Y A  
I F L A  
PS E:\Kuliah\Semester
```