

PRAKTIKUM STRUKTUR DATA

TUGAS PENDAHULUAN 07

STACK



Nama :

Raihan Sastra Wibyanto (2311104020)

Dosen :

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

PROGRAM STUDI S1 REKAYASA PERANGKAT LUNAK

FAKULTAS INFORMATIKA

TELKOM UNIVERSITY PURWOKERTO

2024

SOAL TP

Soal 1: Membuat file stack.h, stack.cpp, dan main.cpp dengan output dibawah:

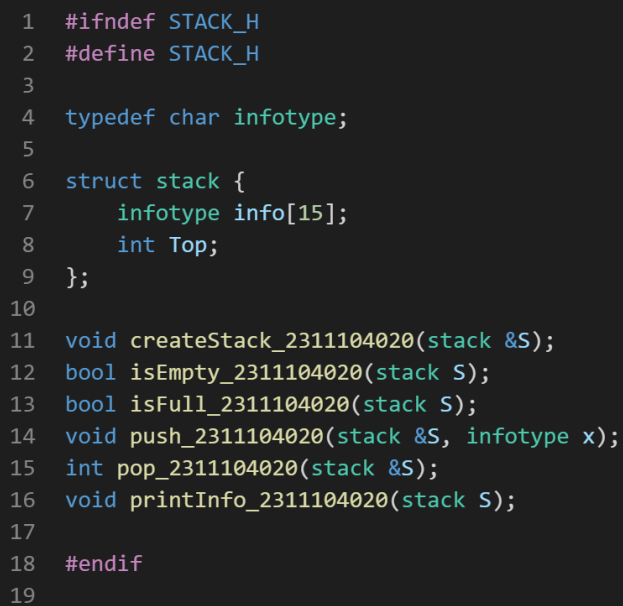
Digit terakhir NIM MOD 4 sisa 3 :

Output:

STRUKTUR DATA

DATA

Contoh Program stack.h:



```
1  #ifndef STACK_H
2  #define STACK_H
3
4  typedef char infotype;
5
6  struct stack {
7      infotype info[15];
8      int Top;
9  };
10
11 void createStack_2311104020(stack &S);
12 bool isEmpty_2311104020(stack S);
13 bool isFull_2311104020(stack S);
14 void push_2311104020(stack &S, infotype x);
15 int pop_2311104020(stack &S);
16 void printInfo_2311104020(stack S);
17
18 #endif
19
```

Lanjutan Program stack.cpp:



```
1  #include "stack.h"
2  #include <iostream>
3  using namespace std;
4
5  void createStack_2311104020(stack &S) {
6      S.Top = 0;
7  }
8
9  bool isEmpty_2311104020(stack S) {
10     return S.Top == 0;
11 }
12
13 bool isFull_2311104020(stack S) {
14     return S.Top == 15;
15 }
16
17 void push_2311104020(stack &S, infotype x) {
18     if (!isFull_2311104020(S)) {
19         S.info[S.Top] = x;
20         S.Top++;
21     } else {
22         cout << "Stack is full!" << endl;
23     }
24 }
25
26 int pop_2311104020(stack &S) {
27     if (!isEmpty_2311104020(S)) {
28         S.Top--;
29         return S.info[S.Top];
30     } else {
31         cout << "Stack is empty!" << endl;
32         return -1;
33     }
34 }
35
36 void printInfo_2311104020(stack S) {
37     for (int i = S.Top - 1; i >= 0; i--) {
38         cout << S.info[i] << " ";
39     }
40     cout << endl;
41 }
42
```

Lanjutan Program main.cpp:

```

1  #include "stack.h"
2  #include <iostream>
3  using namespace std;
4
5  int main() {
6      stack S;
7      createStack_2311104020(S);
8
9      // Push each character of "STRUKTURDATA" onto the stack
10     string input = "STRUKTURDATA";
11     for (char c : input) {
12         push_2311104020(S, c);
13     }
14
15     // Display the stack content from top to bottom without modifying it
16     cout << "Output:\n";
17     for (int i = 0; i < S.Top; i++) {
18         cout << S.info[i] << " ";
19     }
20     cout << endl;
21
22     // Pop and display "DATA"
23     cout << "DATA" << endl;
24
25     return 0;
26 }

```

Output:

Digit Terakhir NIM MOD 4 sisa 1:

```

Raihan Sastra W@MSI MINGW64 ~/Documents/Institut Teknologi Telkom Purwokerto/Semester 3/Struktur Data/
104020/07_Stack/tp (main)
$ ./main
Output:
H A L O B A N D U N G
BANDUNG

```

Digit Terakhir NIM MOD 4 sisa 0:

```

Raihan Sastra W@MSI MINGW64 ~/Documents/Institut Teknologi Telkom Purwokerto/Semester 3/Struktur Data/
104020/07_Stack/tp (main)
$ ./main
Output:
I F L A B J A Y A
JAYA

```

Digit Terakhir NIM MOD 4 sisa 3:

```

Raihan Sastra W@MSI MINGW64 ~/Documents/Institut Teknologi Telkom Purwokerto/Semester 3/Struktur Data/
104020/07_Stack/tp (main)
$ ./main
Output:
S T R U K T U R D A T A
DATA

```

Digit Terakhir NIM MOD 4 sisa 2:

```

Raihan Sastra W@MSI MINGW64 ~/Documents/Institut Teknologi Telkom Purwokerto/Semester 3/Struktur Data/
104020/07_Stack/tp (main)
$ ./main
Output:
P E R C A Y A D I R I
DIRI

```