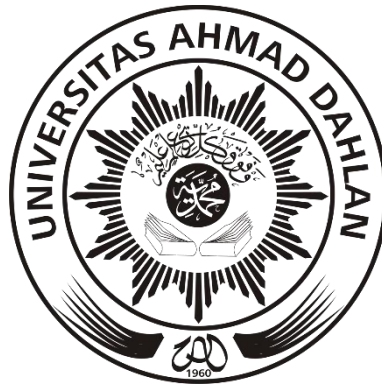


**LAPORAN**  
**ALGORITMA PEMORGRAMAN**

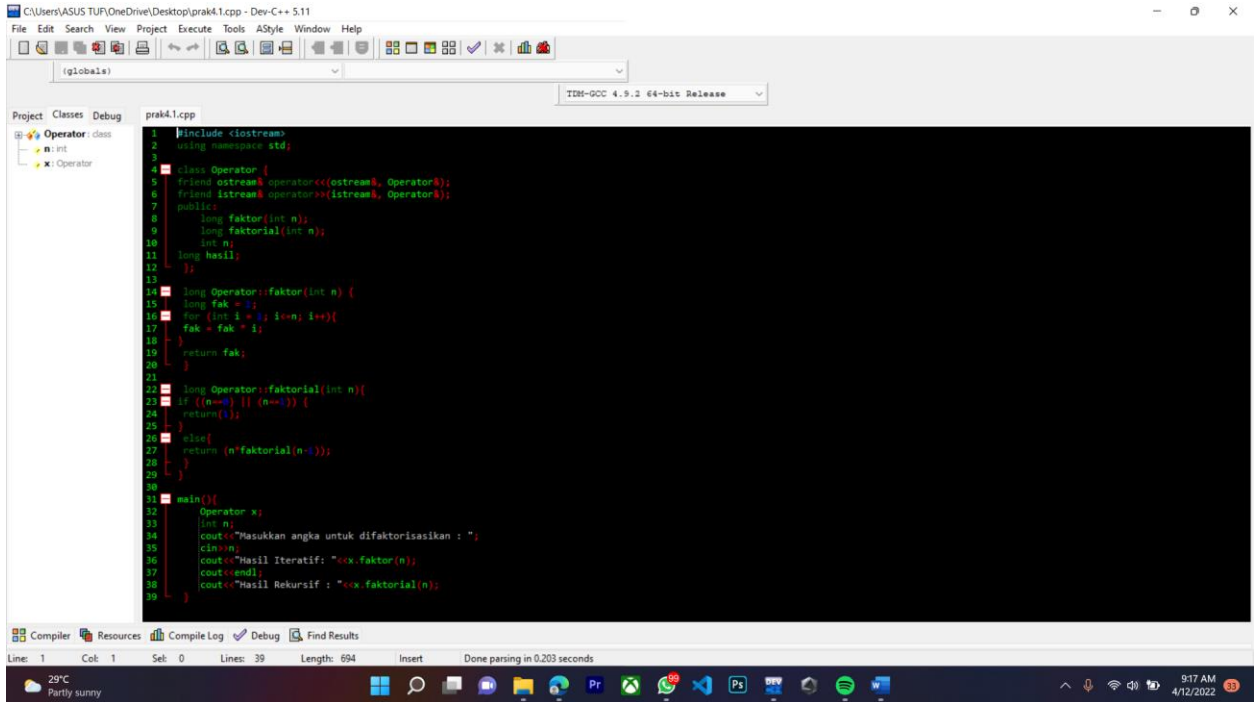


**DISUSUN OLEH**  
RIFAL FEBIYAN (2100018345)  
SLOT SELASA 13.30 – KELAS G

**PROGRAM STUDI INFORMATIKA FAKULTAS**  
**TEKNOLOGI INDUSTRI**  
**UNIVERSITAS AHMAD DAHLAN**  
**TAHUN AJARAN 2021/2022**

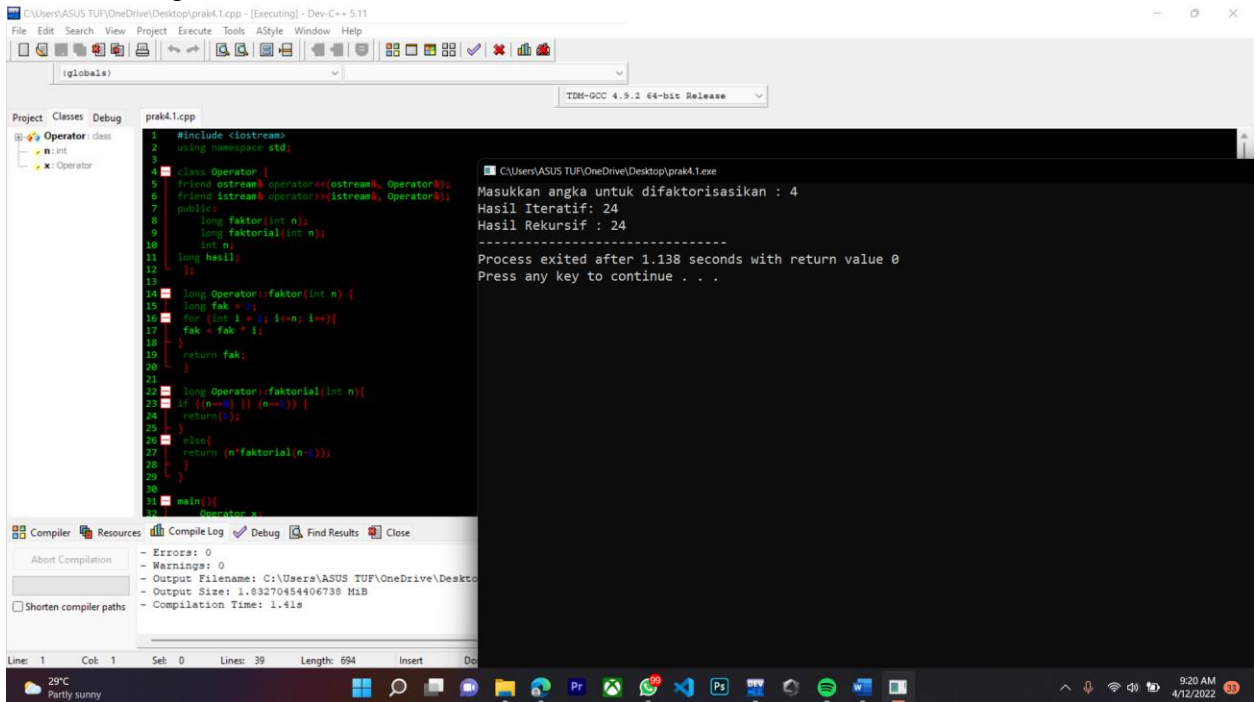
# KEGIATAN 4 : PERULANGAN (ITERATIF-REKURSIF)

## 1. Ketiklah Program dibawah ini!



```
1 #include <iostream>
2 using namespace std;
3
4 class Operator {
5     friend ostream& operator<<(ostream&, Operator&);
6     friend istream& operator>>(istream&, Operator&);
7 public:
8     long faktor(int n);
9     long faktorial(int n);
10    int n;
11    long hasil;
12};
13
14 long Operator::faktor(int n) {
15    long fak = 1;
16    for (int i = 1; i <= n; i++) {
17        fak = fak * i;
18    }
19    return fak;
20}
21
22 long Operator::faktorial(int n) {
23    if ((n==0) || (n==1)) {
24        return 1;
25    }
26    else {
27        return (n*faktorial(n-1));
28    }
29}
30
31 main() {
32    Operator x;
33    int n;
34    cout<<"Masukkan angka untuk difaktorisasikan : ";
35    cin>>n;
36    cout<<"Hasil Iteratif: "<<x.faktor(n);
37    cout<<endl;
38    cout<<"Hasil Rekursif : "<<x.faktorial(n);
39}
```

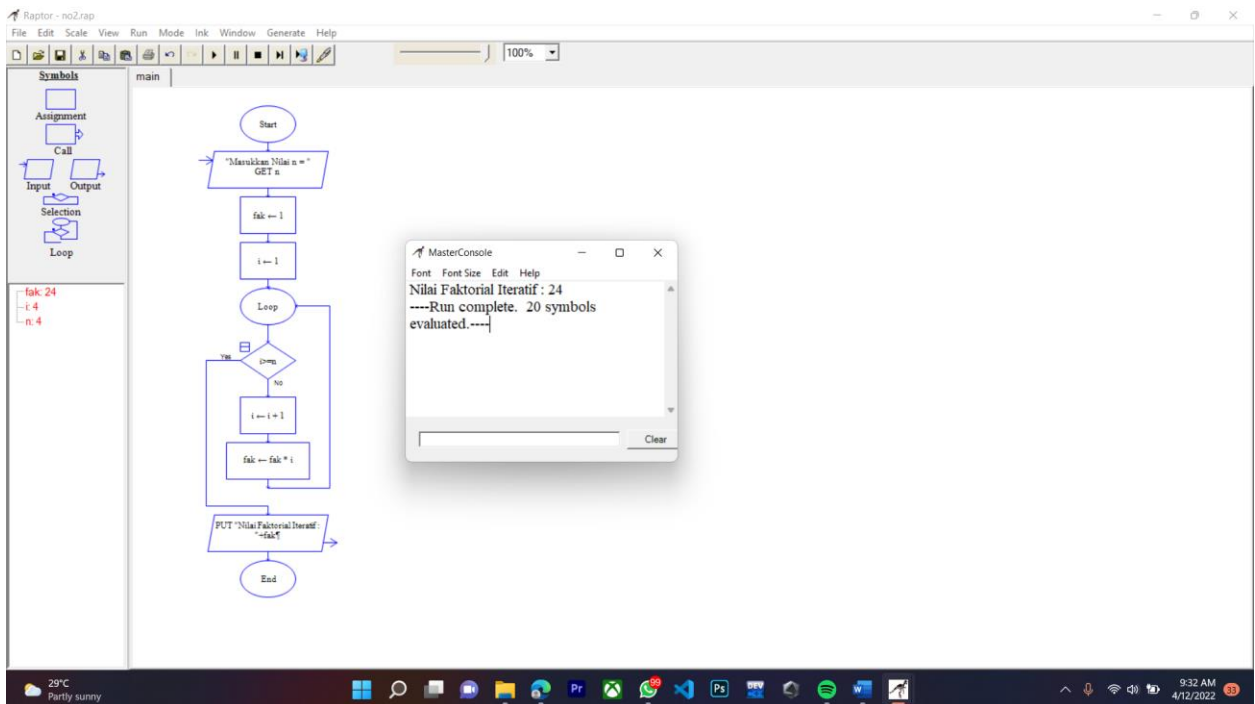
## Jalankan Program



```
C:\Users\ASUS TUF\OneDrive\Desktop\prak4.1.exe
Masukkan angka untuk difaktorisasikan : 4
Hasil Iteratif: 24
Hasil Rekursif : 24
-----
Process exited after 1.138 seconds with return value 0
Press any key to continue . . .
```

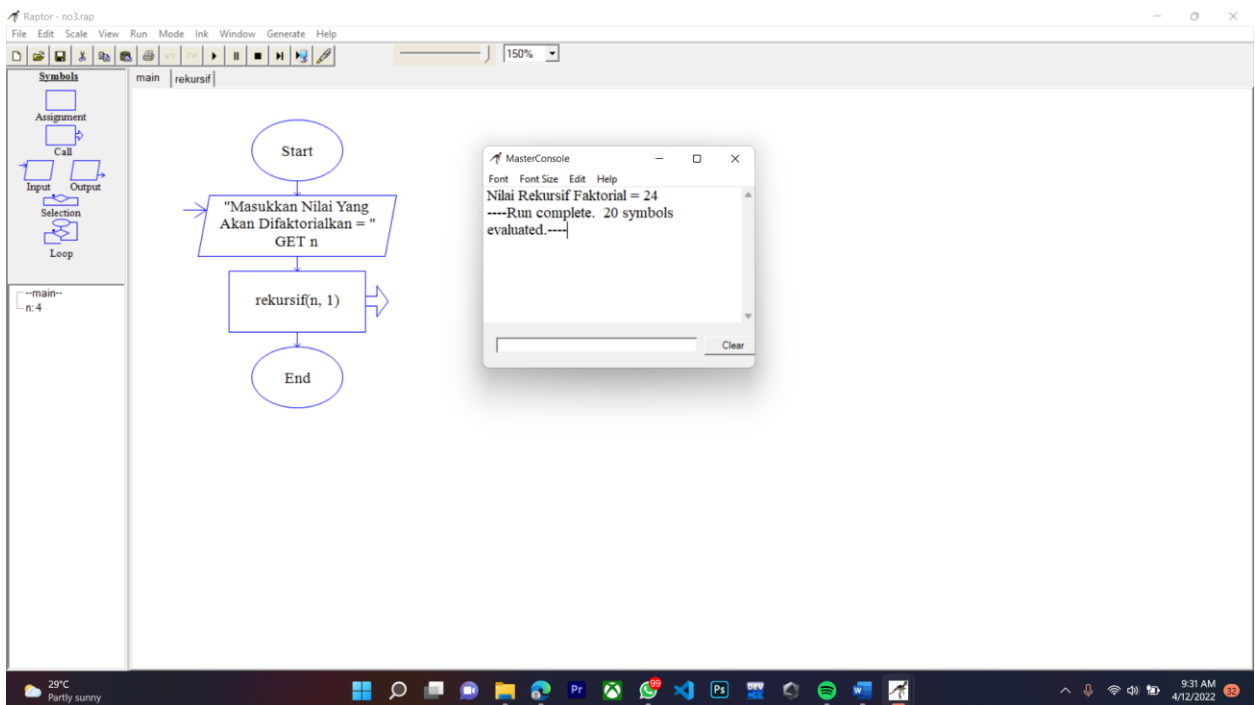
Compiler: 0 Errors: 0, 0 Warnings: 0  
Output Filename: C:\Users\ASUS TUF\OneDrive\Desktop\prak4.1.exe  
Output Size: 1,832,704,544,6738 MiB  
Compilation Time: 1.41s

2. Untuk menelusuri program di atas buatlah raptor dari baris 12 sampai baris 17 amati nilai variabel fak dan i

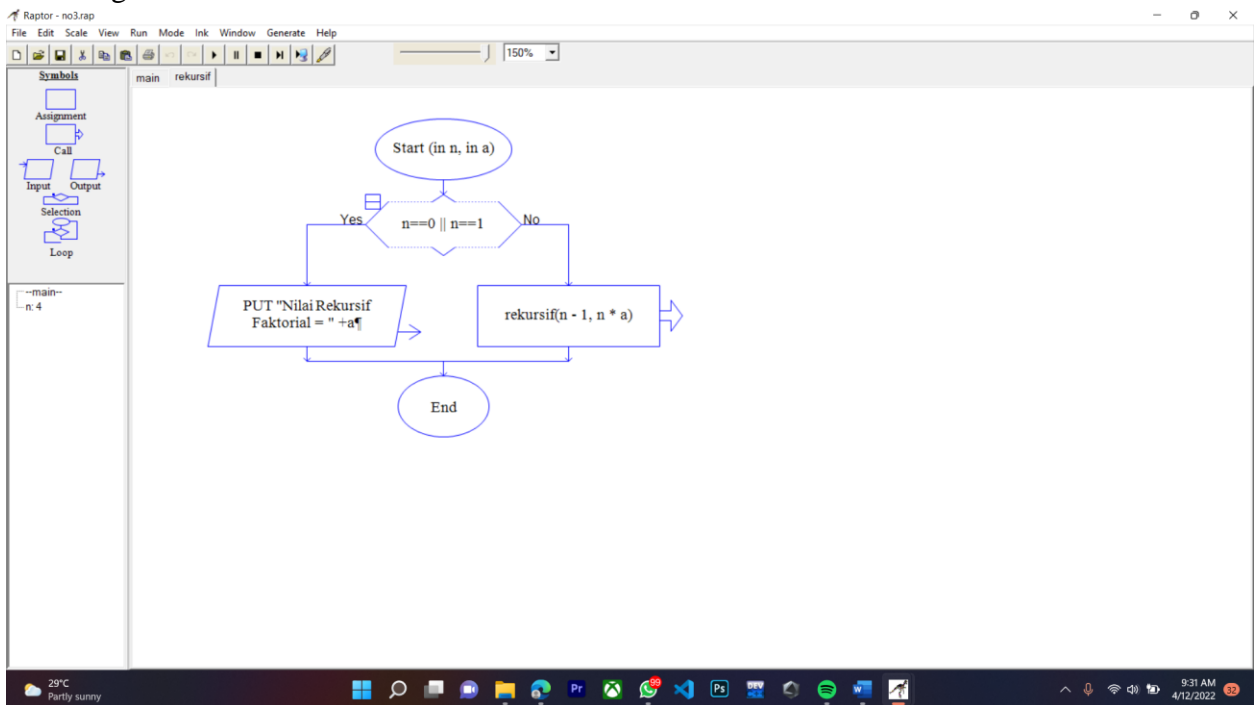


### Faktorisasi Flowchart Secara Iteratif

3. Buatlah raptor dari baris 19 sampai baris 22 jalankan raptor dan amati perubahan dari nilai variabel n



## Sub-Program



## Faktorisasi Flowchart Secara Rekursif

## Screenshot Studi Kasus 4 dan Link Repositornya:

The screenshot shows a GitHub repository page for a C++ program. The repository is named "Praktikum 4 / STUDI KASUS / STUDI KASUS 4 UPDATE.cpp" and is located in the "rifa2100018345-prac-alpro" repository. The latest commit is dated 4/14/2022. The code is displayed in a dark-themed editor, showing the following C++ code:

```
1 #include <iostream>
2 #include <iomanip>
3 using namespace std;
4
5 class operasi{
6 public:
7     void hitung(int uang_saku);
8     void tampilkan();
9 private:
10     int uang_saku;
11     int out[2];
12     int tabungan=0;
13     int totalad;
14 };
15
16 void operasi::hitung(int uang_saku){
17     for (int i=0;i<2;i++){
18         cout<<"Masukkan pengeluaran bulan ke-"<<i<<" : ";cin>>out[i];
19         tabungan+=out_saku-out[i];
20         totalad+=out[i];
21         cout<<"\nbulan ke      : "<<i<<"<<endl;
22         cout<<"uang saku      : "<<uang_saku<<endl;
23         cout<<"Pengeluaran      : "<<out[i]<<endl;
24         cout<<"Total Pengeluaran : "<<totalad<<endl;
25         cout<<"\ntabungan      : "<<tabungan<<endl;
26     }
27 }
28
29 int main (){
30     operasi x;
31     int uang_saku;
32     cout<<"Masukkan uang saku anda tiap bulan : ";cin>>uang_saku;
33     x.hitung(uang_saku);
34 }
```

LINK: [rifa2100018345-prac-alpro/Praktikum 4/STUDI KASUS at master · rifa2100018345-prac-alpro \(github.com\)](https://github.com/rifa2100018345-prac-alpro/Praktikum%204%20STUDI%20KASUS%20STUDI%20KASUS%204%20UPDATE.cpp)