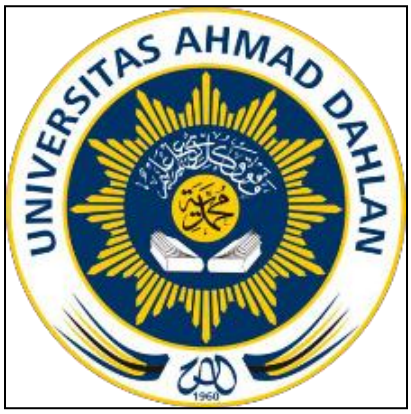
LAPORAN PRAKTEK

ALGORITMA PEMROGRAMAN



DISUSUN OLEH:

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FAKULTAS TEKNOLOGI INDUSTRI

UNIVERSITAS AHMAD DAHLAN

2022

prak.h

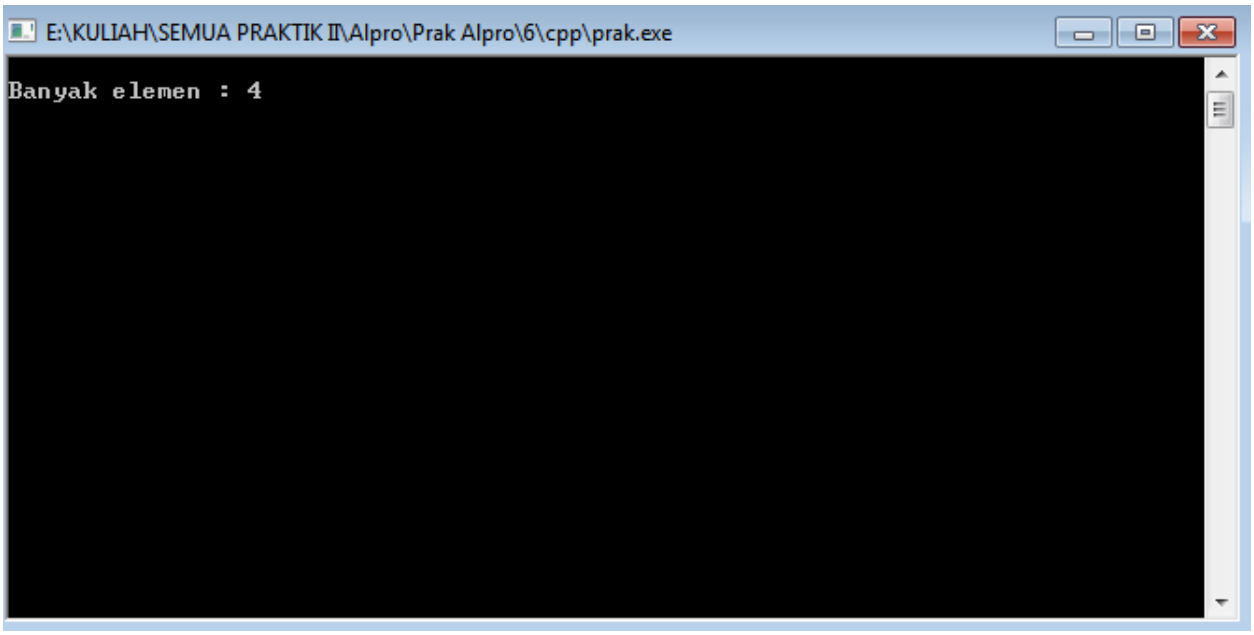
```
#include <iostream>
#include <iomanip>
#include <conio.h>
using namespace std;
class Vektor{
    friend ostream&operator<<(ostream&,Vektor&);
    friend istream&operator>>(istream&,Vektor&);
public:
    Vektor();
    void penjumlahan_vektor(const Vektor&,const Vektor&);
    void perkalian_vektor(float,const Vektor&);
    void beri_nilaiBanyak(int);
private:
    int elemen[100];
    int banyak;
};

Vektor::Vektor(){
    banyak = 3;
    for (int i = 0; i<banyak;i++)
    elemen[i]=0;
}
void Vektor::beri_nilaiBanyak(int i){
    banyak = i;
}
istream& operator>>(istream& in, Vektor&A){
    cout<<"\nBanyak elemen : ";
    in>>A.banyak;
    cout<<"Masukkan data vektor\n";
    for(int i = 0; i < A.banyak;i++){
        cout<<"Data ["<<i+1<<"] : ";
        cin>>A.elemen[i];
    }
    return in;
```

```
}
ostream& operator<<(ostream& out,Vektor& A){
    cout<<endl;
    for (int i = 0;i < A.banyak; i++){
        cout<<"s["<<i+1<<"] = "<<setw(5)<<A.elemen[i]<<"\n";
    }
    return out;
}
void Vektor::penjumlahan_vektor(const Vektor& A,const Vektor&
    if (A.banyak  > B.banyak){
        banyak = A.banyak;
    }
    else{
        banyak = B.banyak;
    }
    for (int i = 0;i<banyak;i++){
        elemen[i] = A.elemen[i] + B.elemen[i];
    }
}
void Vektor::perkalian_vektor(float k,const Vektor&A){
    banyak = A.banyak;
    for(int i = 0; i <banyak;i++){
        elemen[i]=k*A.elemen[i];
    }
}
```

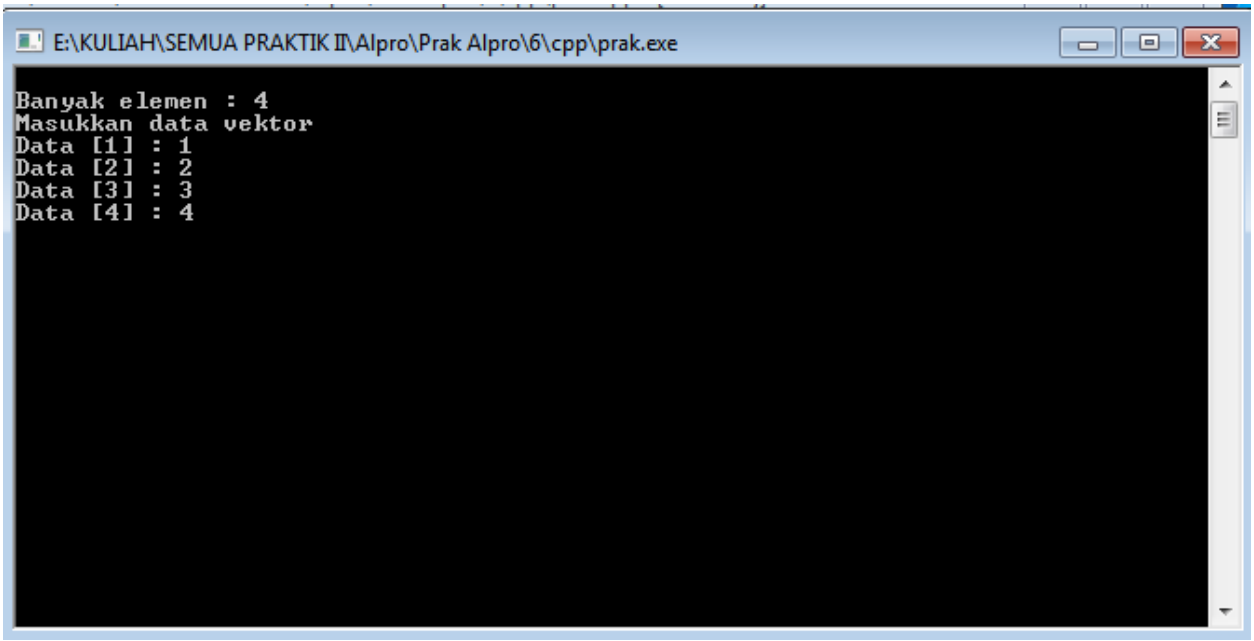
Membuat prak.h

```
#include "prak.h"
main(){
    Vektor x,y,z;
    cin>>x;
    cout<<x;
    cin>>y;
    cout<<y;
    z.penjumlahan_vektor(x,y);
    cout<<"\nHasil penjumlahan 2 vektor\n"<<z;
    z.perkalian_vektor(3,x);
    cout<<"\nHasil perkalian skalar dengan vektor\n"<<z;
    getch();
}
```

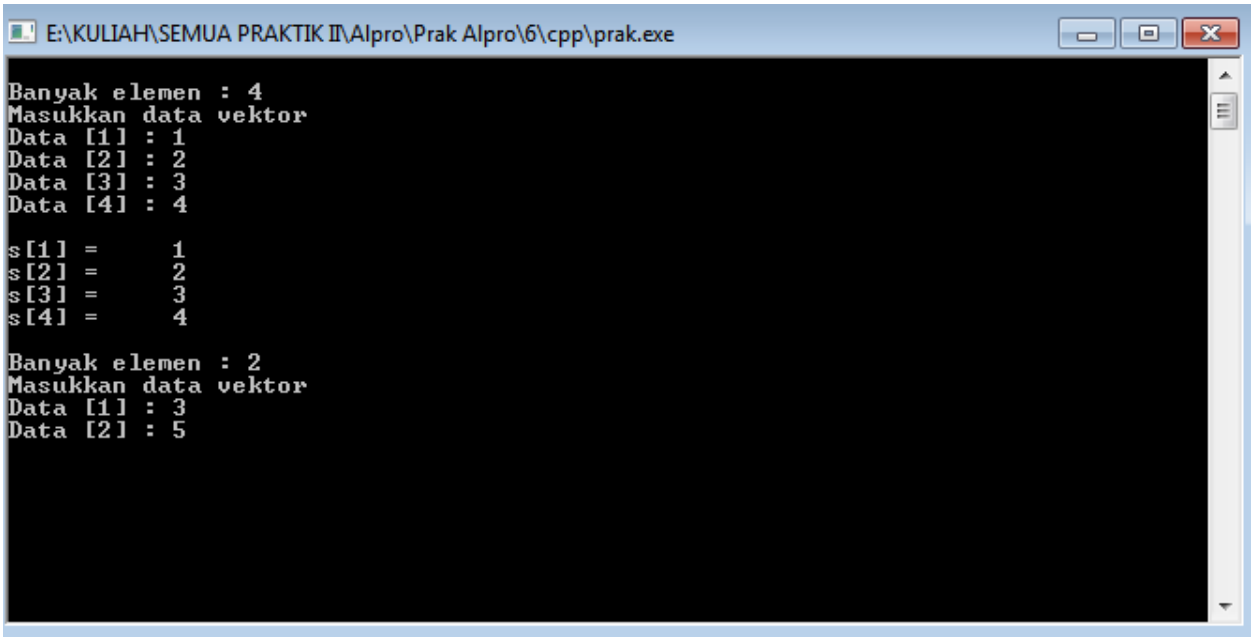
Membuat main.cpp



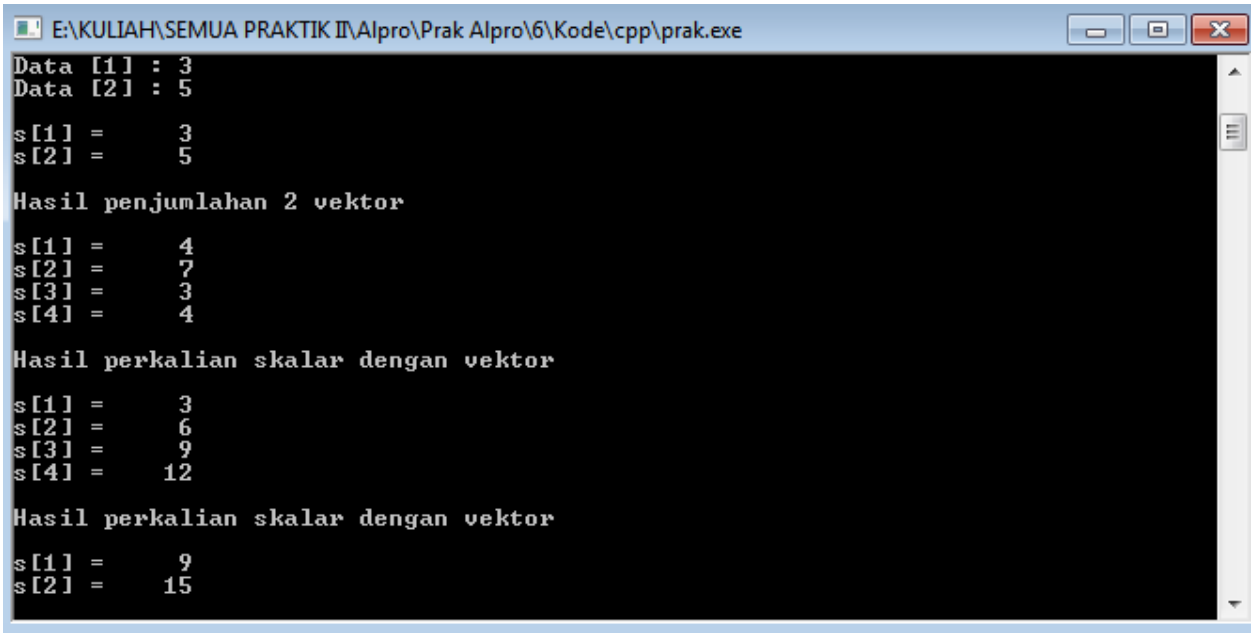
Memasukkan banyak elemen



Mengisi nilai elemen



Hasil elemen 1 kemudian memasukkan nilai ke 2



Hasil penjumlahan dan perkalian

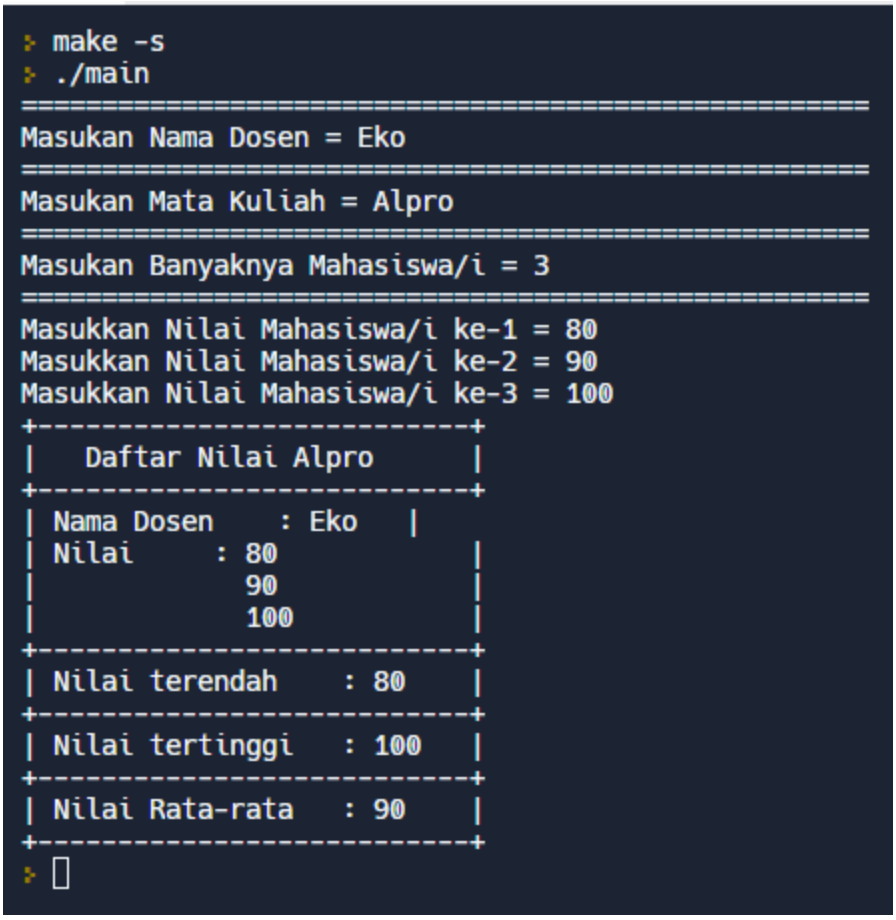
```cpp
#include <iostream>
using namespace std;

class Kasus{
  public:
    void input();
    void output();
    void proses();
  private:
    string namaDosen;
    string Matkul;
    int banyakMhs;
    int nilai[50];
    int n,max,min;
    float jml = 0,rata;
};
void Kasus::input(){

cout<<"================================================
====\n";
  cout<<"Masukan Nama Dosen = ";
  cin>>namaDosen;

cout<<"================================================
```

Studi Kasus

```
22    cout<<"Masukan Mata Kuliah = ";
23    cin>>Matkul;
24
cout<<"================================================
====\n";
25    cout<<"Masukan Banyaknya Mahasiswa/i = ";
26    cin>>banyakMhs;
27
cout<<"================================================
====\n";
28
29 ▼  for(n=1; n<=banyakMhs; n++){
30      cout<<"Masukkan Nilai Mahasiswa/i ke-"<<n<<" = ";
31      cin>>nilai[n];
32    }
33  }
34 ▼ void Kasus::proses(){
35 ▼   for(n=1; n<=banyakMhs; n++){
36          jml+=nilai[n];
37 ▼      if( n==1 ){
38        min = nilai[n];
39        max = nilai[n];
40      }
```

```
    else if( min > nilai[n] ){
      min = nilai[n];
    }
    else if( max < nilai[n] ){
      max = nilai[n];
    }
  }
  rata=jml/banyakMhs;
}
void Kasus::output(){
  cout<<"+---------------------------+\n";
  cout<<"|\tDaftar Nilai Alpro\t\t|\n";
  cout<<"+---------------------------+\n";
  cout<<"| Nama Dosen : "<<namaDosen<<"\t|\n";
  cout<<"| Nilai    : ";
  for(n=1; n<=banyakMhs; n++){
    if(n==1){
      cout<<nilai[n]<<"\t\t\t|\n";
    }
    else{
    cout<<"|\t\t\t  "<<nilai[n]<<"\t\t\t|\n";
    }
  }
  cout<<"+---------------------------+\n";
  cout<<"| Nilai terendah : "<<min<<"\t|\n";
  cout<<"+---------------------------+\n";
  cout<<"| Nilai tertinggi  : "<<max<<"\t|\n";
```

```
  cout<<"| Nilai tertinggi  : "<<max<<"\t|\n";
  cout<<"+---------------------------+\n";
  cout<<"| Nilai Rata-rata  : "<<rata<<"\t|\n";
  cout<<"+---------------------------+\n";
}
int main(){
  Kasus x;
  x.input();
  x.proses();
  x.output();
}
```


make -s
./main
==========
Masukan Nama Dosen = Eko
==========
Masukan Mata Kuliah = Alpro
==========
Masukan Banyaknya Mahasiswa/i = 3
==========
Masukkan Nilai Mahasiswa/i ke-1 = 80
Masukkan Nilai Mahasiswa/i ke-2 = 90
Masukkan Nilai Mahasiswa/i ke-3 = 100
Daftar Nilai Alpro
Nama Dosen : Eko
Nilai : 80
90
100
Nilai terendah : 80
Nilai tertinggi : 100
Nilai Rata-rata : 90

Hasil

Link repo:

https://github.com/142Eko/Prak-alpro/tree/master/6/Kode

https://replit.com/@fahrulsanaky/studi-kasus-2#main.cpp