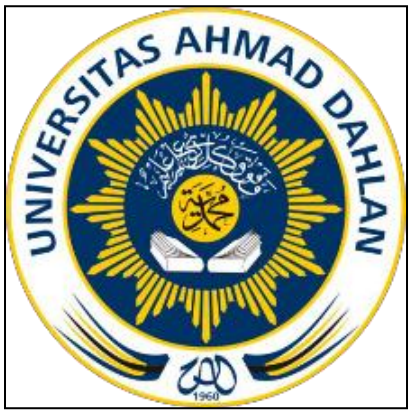
LAPORAN PRAKTEK

ALGORITMA PEMROGRAMAN



DISUSUN OLEH:

EKO RACHMAT SATRIYO (2100018142)

KELAS C

PROGRAM STUDI TEKNIK INFORMATIKA

FAKULTAS TEKNOLOGI INDUSTRI

UNIVERSITAS AHMAD DAHLAN

2022

```
class Sorting {
    friend istream& operator>>(istream& in,Sorting& a);
    friend ostream& operator<<(ostream& in,Sorting& a);
public:
    void selection_sort();
    int pencarianBiner(int low,int high);
private:
    void minimum(int,int,int &);
    void tukar(int &,int &);
    int data[10],n;
};

void Sorting::minimum(int dari,int n,int &tempat){
    int min = data [dari];
    tempat = dari;
    for (int i = dari+1;i<n;i++)
    if (data[i] < min){
        min = data  [i];
        tempat = i;
    }
}

void Sorting::tukar(int &a,int &b){
    int temp;
    temp = a;
    a = b;
    b = temp;
}

void Sorting::selection_sort(){
    int t;
    for (int i = 0; i < n;i++){
        minimum (i,n,t);
        tukar(data[i],data[t]);
    }
}
int Sorting::pencarianBiner(int low,int high){
    int middle;
    while (low <= high){
        middle=(low+high)/2;
        cetakBaris(low,middle,high);
        if (kunciPencarian == data [middle])
        return middle;
        else if (kunciPencarian < data[middle])
        high = middle -1;
        else low = middle +1;
    }
    return -1;
}

```

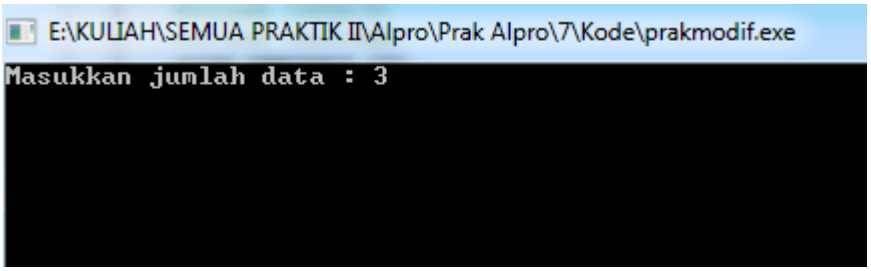
Menuliskan kode

```
#include <conio.h>
#include <iostream>
using namespace std;
class sorting{
    friend istream& operator>>(istream&, sorting&);
    friend ostream& operator<<(ostream&, const sorting&);
public:
    sorting();
    void selection_sort();
    int pencarianbiner(int);
    void cetakbaris(int,int,int);
    void selection_sort(int&, int&);
    void cari_data();
private:
    void minimum(int, int, int&);
    void tukar(int&, int&);
    int data[100], n;
};

sorting::sorting(){
n=10;
}

void sorting::selection_sort(){
    int t;
    for(int i=0; i<n; i++){
        minimum(i,n,t);
        tukar(data[i], data[t]);
    }
}

void sorting::minimum(int dari, int n,int& tempat){
    int min=data[dari];
    tempat=dari;
    for(int i=dari+1; i<n; i++){
        if(data[i]<min){
            min=data[i];
            tempat=i;
    }
    }
}
```

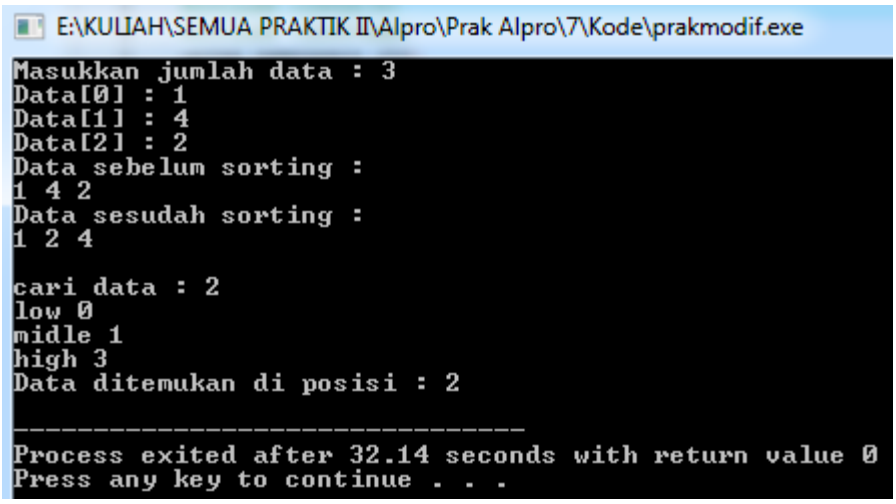
Memodifikasi kode

```
42
43  void sorting::tukar(int&a, int&b){
44      int temp;
45      temp=a;
46      a=b;
47      b=temp;
48  }
49
50  void sorting::cari_data()
51  {
52      int posisi=0, qq;
53      cout <<"cari data : "; cin >> qq;
54      for(int i=0; i<n; i++){
55          if(data[i]==qq) {
56              posisi = i+1;
57          }
58      }
59      if(pencarianbiner(qq)==-1) cout <<"tdk ada"<<endl;
60      else cout << "Data ditemukan di posisi : "<< posisi << endl;
61
62  }
63
64      int sorting::pencarianbiner(int qq){
65          int midle, low=0, high=n;
66          while(low<=high){
67              midle=(low+high)/2;
68              cetakbaris(low,midle,high);
69      if(qq==data[midle])
70          return midle;
71      else if(qq< data[midle])
72          high = midle-1;
73      else low=midle+1;
74      }
75      return -1;
76  }
77
78  void sorting::cetakbaris(int low,int midle,int high){
79      cout<<"low "<<low<<" \nmidle "<<midle<<" \nhigh "<<high<<endl;
80  }
```

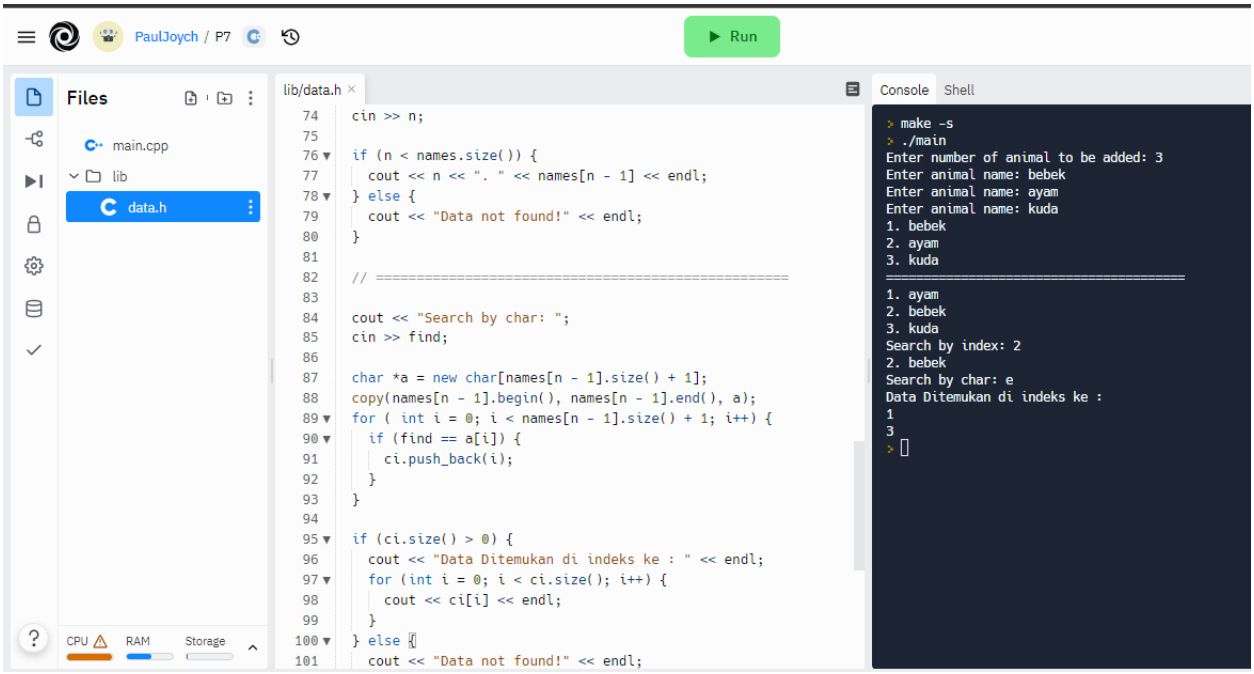
```
81
82
83  istream& operator>>(istream& in, sorting& A){
84      cout << "Masukkan jumlah data : ";cin >> A.n;
85      for(int i=0; i<A.n;i++){
86          cout <<"Data["<<i<<"] : ";
87          in >> A.data[i];
88      }
89      return in;
90      }
91
92  ostream& operator<<(ostream& out, const sorting& A){
93      for(int i=0; i<A.n;i++){
94          out<<A.data[i]<<" ";
95      }
96  return out;
97  }
98
99  int main(){
100     sorting X;
101     cin >> X;
102     cout <<"Data sebelum sorting :\n";
103     cout <<X<<endl;
104     X.selection_sort();
105     cout <<"Data sesudah sorting :\n";
106     cout <<X<<endl<<endl;
107     X.cari_data();
108     getch();
109     return 0;
110 }
```



Masukkan jumlah data



Hasil



Studi kasus

Link

https://replit.com/@PaulJoych/P7#lib/data.h

https://github.com/142Eko/Prak-alpro/tree/master/7/Kode