PRAKTIKUM

STRUKTUR DATA

SEMESTER GENAP TAHUN AKADEMIK 2024/2025

Tanggal

.....

Materi

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PRODI SISTEM INFORMASI FAKULTAS

TEKNIK DAN ILMU KOMPUTER

UNIVERSITAS NUSANTARA PGRI KEDIRI 2025

BAB II

PERCOBAAN DAN LATIHAN

Percobaan 1

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

int main()
{
    int data = 5;
    int *pointerku;

    cout << "data        :" << data << endl;
    cout << "alamat data : " << &data << endl
    cout << "pointerku   : " << pointerku << endl
         << endl;

    pointerku = &data;
    cout << "pointerku     : " << pointerku << endl
         << endl;

    *pointerku = 10;
    cout << "pointerku   : " << pointerku << endl;
    cout << "pointerku   : " << *pointerku << endl;
    cout << "data          : " << data << endl;

    system("pause");
    return 0;
}
```

Percobaan 2

```cpp
#include <iostream>
#include <conio.h>
using namespace std;

struct node
{
    int data;
    node *next; //menyimpan alamat baru dari node selanjutnya
};

node *head, *temp, *insert;
int x;

//fungsi untuk menampilkan data linked list
void tampil(){
    node *bantu;
    bantu = head;
    while(bantu != NULL){
        cout<<bantu->data<<" ";
        bantu=bantu->next;
    }
    cout<<endl;
}
```

```cpp
int main() {
    //pengisian single linked list secara manual
    head = new node;
    head->data=10;
    head->next = new node;
    head->next->data = 20;
    head->next->next = new node;
    head->next->next->data = 40;
    head->next->next->next = NULL;
    cout<<"Data awal : ";
    tampil();
```

```
    //insert di awal node
    insert = new node;
    insert->data = 5;
    insert->next = head;
    head = insert;

    cout<<"Data insert di awal : ";
    tampil();
```

```
    //insert setelah node tertentu (x)
    x = 10;
    insert = new node;
    insert->data=35;
    insert->next=NULL;
    node *after;
    after = head;
    while (after->data != x){
        after = after->next;
    }
    if(after->data == x){
        insert->next=after->next;
        after->next = insert;
    }else{
        cout<<"Data tidak ditemukan"<<endl;
    }
    cout<<"Data setelah insert setelah 10 : ";
    tampil();

    getch();
    return 0;
}
```

Latihan 1

```
#include <iostream>
#include <conio.h>
using namespace std;

struct node
{
    int data;
    node *next; //menyimpan alamat baru dari node selanjutnya
};

node *head, *temp, *insert;
int x;

//fungsi untuk menampilkan data linked list
void tampil(){
    node *bantu;
    bantu = head;
    while(bantu != NULL){
        cout<<bantu->data<<" ";
        bantu=bantu->next;
    }
    cout<<endl;
}
```

```
int main() {
    //pengisian single linked list secara manual
    head = new node;
    head->data=10;
    head->next = new node;
    head->next->data = 20;
    head->next->next = new node;
    head->next->next->data = 40;
    head->next->next->next = NULL;
    cout<<"Data awal : ";
    tampil();
```

```
    //insert di awal node
    insert = new node;
    insert->data = 5;
    insert->next = head;
    head = insert;
    cout<<"Data insert di awal : ";
    tampil();
```

```
    //insert setelah node tertentu (x)
    x = 10;
    insert = new node;
    insert->data=35;
    insert->next=NULL;
    node *after;
    after = head;
    while (after->data != x){
        after = after->next;
    }
    if(after->data == x){
        insert->next=after->next;
        after->next = insert;
    }else{
        cout<<"Data tidak ditemukan"<<endl;
    }
    cout<<"Data setelah insert setelah 10 : ";
    tampil();
```

```
    //insert sebelum node tertentu
    x = 20;
    insert = new node;
    insert->data = 15;
    insert->next = NULL;

    //jika disisipkan di depan head
    if(head != NULL && head->data==x){
        insert->next = head;
        head = insert;
    } else {
        node *prev = head;
        while (prev->next != NULL && prev->next->data != x){
            prev = prev->next;
        }

        if(prev->next != NULL){
            insert->next = prev->next;
            prev->next = insert ;
        }else{
            cout<<"data tidak ditemukan"<<endl;
        }
    }
    cout<<"Data setelah insert sebelum 20 : ";
    tampil();
```

```
    //insert di akhir node
    insert = new node;
    insert->data = 50;
    insert->next = NULL;

    node *tail = head;
    while(tail->next != NULL){ //mencari next terakhir yaitu null
        tail = tail->next;
    }

    tail->next = insert; //lalu null diganti dengan insert, supaya next ke node insert
    cout<<"Data insert di akhir : ";
    tampil();


    getch();
    return 0;
}
```

BAB IV

TAMPILAN PROGRAM

Percobaan 1

```
data         :5
alamat data : 0x61ff08
pointerku    : 0x401beb

pointerku      : 0x61ff08

pointerku    : 0x61ff08
pointerku    : 10
data             : 10
```

Percobaan 2

```
Data awal : 10 20 40
Data insert di awal : 5 10 20 40
Data setelah insert setelah 10 : 5 10 35 20 40
```

Latihan 1

```
Data awal : 10 20 40
Data insert di awal : 5 10 20 40
Data setelah insert setelah 10 : 5 10 35 20 40
Data setelah insert sebelum 20 : 5 10 35 15 20 40
Data insert di akhir : 5 10 35 15 20 40 50
```