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2E Teknik Informatika
Contoh Modul

```
#include <iostream>
#include <stdlib.h>
#include <malloc.h>
#include <conio.h>

using namespace std;

#define Nil NULL
#define info(P) P->info
#define next(P) P->next
#define First(L) (L)

typedef int InfoType;
typedef struct termtlist *address;
typedef struct termtlist
{
    InfoType info;
    address next;
} elmtlist;
typedef address list;
void CiptaSenarai(list *L)
{
    First(*L) = Nil;
}
list NodBaru(int m)
{
    list n;
    n = (list)malloc(sizeof(elmtlist));
    if (n != NULL)
    {
        info(n) = m;
        next(n) - Nil;
    }
    return n;
}
void SisipSenarai(list *L, list t, list p)
{
    if (p == Nil)
    {
        t->next = *L;
        *L = t;
    }
    else
    {
        t->next = p->next;
        p->next = t;
    }
}
void CetakSenarai(list L)
```

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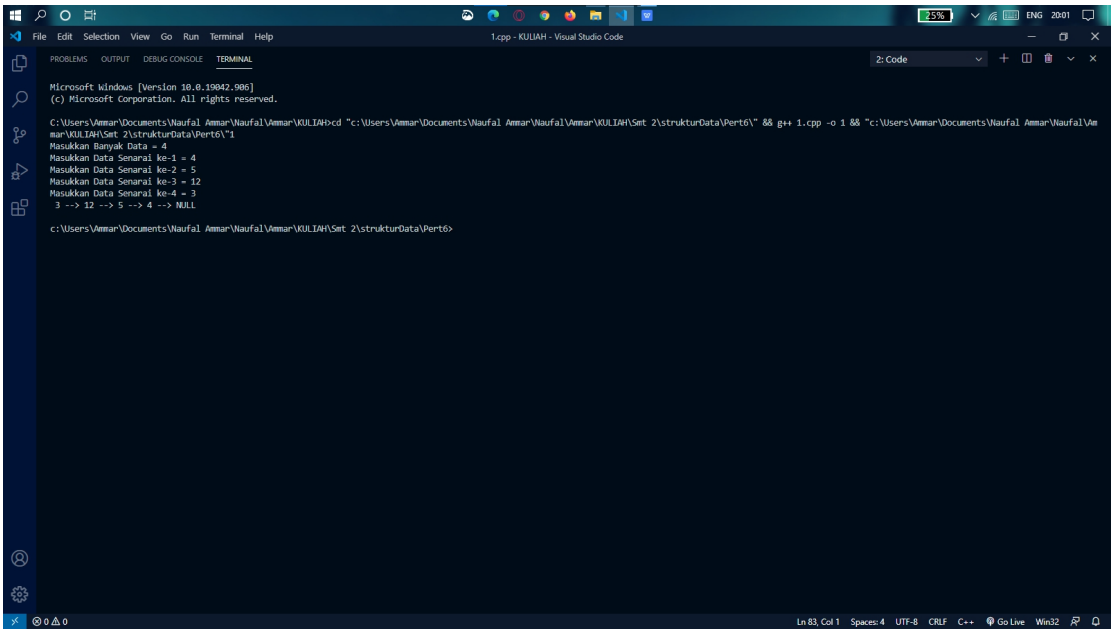
```
{
    list ps;
    for (ps = L; ps != Nil; ps = ps->next)
    {
        cout << " " << info(ps) << " -->";
    }
    cout << " NULL" << endl;
}
int main()
{
    list pel;
    list n;
    int i, k, nilai;
    CiptaSenarai(&pel);
    cout << "Masukkan Banyak Data = ";
    cin >> k;
    for (i = 1; i <= k; i++)
    {
        cout << "Masukkan Data Senarai ke-" << i << " = ";
        cin >> nilai;
        n = NodBaru(nilai);
        SisipSenarai(&pel, n, NULL);
    }
    CetakSenarai(pel);
    return 0;
}
```



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```cpp
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#define Nil NULL
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typedef int InfoType;
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{
    InfoType info;
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} elmtlist;
typedef address list;
void CiptaSenarai(list *L)
{
    First(*L) = Nil;
}
list NodBaru(int m)
{
    list n;
    n = (list)malloc(sizeof(elmtlist));
    if (n != NULL)
    {
        info(n) = m;
        next(n) - Nil;
    }
    return n;
}
void SisipSenarai(list *L, list t, list p)
{
    if (p == Nil)
    {
        t->next = *L;
        *L = t;
    }
    else
    {
        t->next = p->next;
        p->next = t;
    }
}
void CetakSenarai(list L)
{
    list ps;
```

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```
    for (ps = L; ps != Nil; ps = ps->next)
    {
        cout << " " << info(ps) << " -->";
    }
    cout << " NULL" << endl;
}
InfoType Max(list L)
{
    address Pmax, Pt;
    Pmax = First(L);
    if (next(Pmax) == Nil)
    {
        return (info(Pmax));
    }
    else
    {
        Pt = next(Pmax);
        while (Pt != Nil)
        {
            if (info(Pmax) < info(Pt))
            {
                Pmax = Pt;
            }
            else
            {
                Pt = next(Pt);
            }
        }
        return (info(Pmax));
    }
}
InfoType Min(list L)
{
    address Pmin, Pt;
    Pmin = First(L);
    if (next(Pmin) == Nil)
    {
        return (info(Pmin));
    }
    else
    {
        Pt = next(Pmin);
        while (Pt != Nil)
        {
            if (info(Pmin) > info(Pt))
            {
                Pmin = Pt;
            }
            else
            {
                Pt = next(Pt);
```

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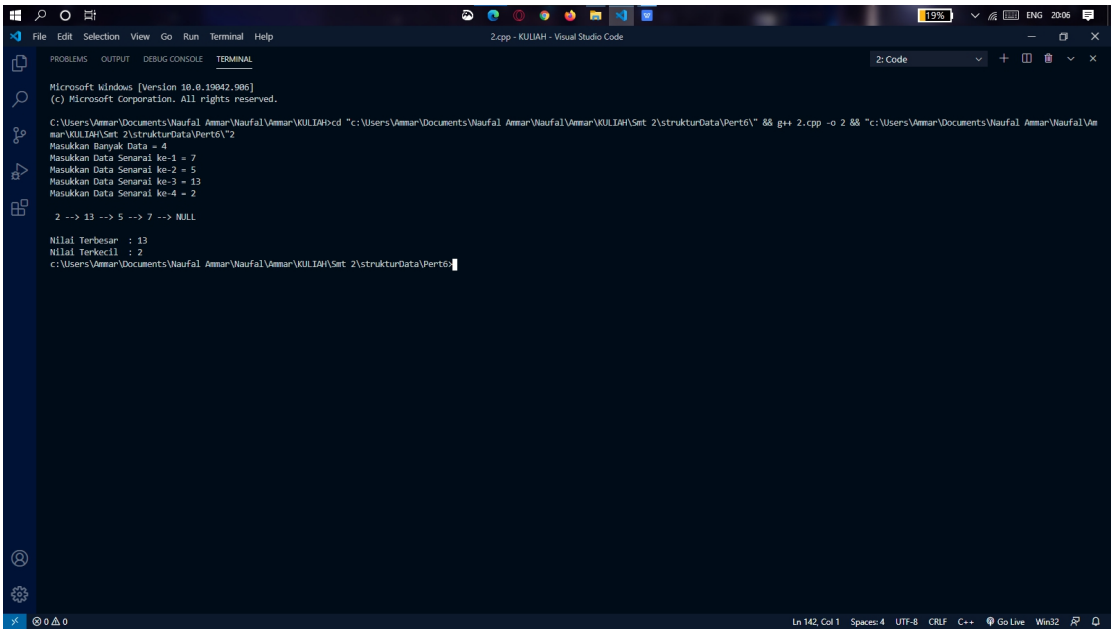
```
            }
        }
        return (info(Pmin));
    }
}
int main(int argc, char const *argv[])
{
    list pel;
    list n;
    int i, k, nilai, maks, min;
    CiptaSenarai(&pel);
    cout << "Masukkan Banyak Data = ";
    cin >> k;
    for (i = 1; i <= k; i++)
    {
        cout << "Masukkan Data Senarai ke-" << i << " = ";
        cin >> nilai;
        n = NodBaru(nilai);
        SisipSenarai(&pel, n, NULL);
    }
    cout << endl;
    CetakSenarai(pel);
    maks = Max(pel);
    min = Min(pel);
    cout << endl;
    cout << "Nilai Terbesar\t: " << maks << endl
         << "Nilai Terkecil\t: " << min;
}
```



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Contoh GOOGLE

```
#include <stdio.h>
#include <iostream>
#include <conio.h>
#include <stdlib.h>

using namespace std;

struct TNode
{
    int data;
    TNode *next;
};
TNode *head, *tail;
void init()
{
    head = NULL;
    tail = NULL;
}
int isEmpty()
{
    if (tail == NULL)
        return 1;
    else
        return 0;
}
void insertDepan(int databaru)
{
    TNode *baru;
    baru = new TNode;
    baru->data = databaru;
    baru->next = NULL;
    if (isEmpty() == 1)
    {
        head = tail = baru;
        tail->next = NULL;
    }
    else
    {
        baru->next = head;
        head = baru;
    }
    cout << "Data masuk\n";
}
void tampil()
{
    TNode *bantu;
    bantu = head;
    if (isEmpty() == 0)
    {
```

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```
        while (bantu != NULL)
        {
            cout << bantu->data << " ";
            bantu = bantu->next;
        }
    }
    else
        cout << "Masih kosong\n";
}
void hapusDepan()
{
    TNode *hapus;
    int d;
    if (isEmpty() == 0)
    {
        if (head != tail)
        {
            hapus = head;
            d = hapus->data;
            head = head->next;
            delete hapus;
        }
        else
        {
            d = tail->data;
            head = tail = NULL;
        }
        cout << d << " terhapus";
    }
    else
        cout << "Masih kosong\n";
}
void clear()
{
    TNode *bantu, *hapus;
    bantu = head;
    while (bantu != NULL)
    {
        hapus = bantu;
        bantu = bantu->next;
        delete hapus;
    }
    head = NULL;
    printf("clear");
}
main()
{
    int pil, databaru;
    do
    {
        system("cls");
```

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```
        cout << endl;
        cout << " ============================" << endl;
        cout << " =   PROGRAM LINKED LIST    =" << endl;
        cout << " ============================" << endl;
        cout << " = 1. Insert Depan          =" << endl;
        cout << " = 2. Delete Depan          =" << endl;
        cout << " = 3. Tampil Data           =" << endl;
        cout << " = 4. Clear                 =" << endl;
        cout << " = 5. Exit                  =" << endl;
        cout << " ============================" << endl;
        cout << " Masukan Pilihan : ";
        cin >> pil;
        switch (pil)
        {
        case 1:
            system("cls");
            {
                cout << "Masukan Data = ";
                cin >> databaru;
                insertDepan(databaru);
                break;
            }
        case 2:
            system("cls");
            {
                hapusDepan();
                break;
            }
        case 3:
            system("cls");
            {
                tampil();
                break;
            }
        case 4:
            system("cls");
            {
                clear();
                break;
            }
        case 5:
            system("cls");
            {
                return 0;
                break;
            }
        default:
            system("cls");
            {
                cout << "\n Maaf, Pilihan yang anda pilih tidak tersedia!";
            }
```

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```
        }
        getch();
    } while (pil != 7);
}
```