

TP Module 6

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bank.h

```
bank.h X bank.cpp X main.cpp X
1  #ifndef BANK_H_INCLUDED
2  #define BANK_H_INCLUDED
3
4  #include <string>
5  #include <iostream>
6  using namespace std;
7
8  #define info(P) (P)->info
9  #define next(P) (P)->next
10 #define prev(P) (P)->prev
11 #define first(L) ((L).first)
12 #define last(L) ((L).last)
13
14 struct bank{
15     string nasabah;
16     string rekening;
17     int saldo;
18 };
19
20 typedef bank infotype;
21 typedef struct elmList *adr;
22
23 struct elmList {
24     infotype info;
25     adr next;
26     adr prev;
27 };
28
29 struct List{
30     adr first;
31     adr last;
32 };
33
34 void create_list(List &L);
35 adr newElement(infotype dataBaru);
36 void insertLast(List &L, adr p);
37 void showAllData(List L);
38 bool searching(List L, infotype x);
39 int selectMenu();
40
41 #endif // BANK_H_INCLUDED
```

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Bank.cpp

```

bankh X *bank.cpp X main.cpp X
1  #include "bank.h"
2
3  void create_list(List &L) {
4      first(L) = NULL;
5      last(L) = NULL;
6  }
7
8  adr newElement(infotype dataBaru) {
9      adr p = new elmList;
10
11      info(p) = dataBaru;
12      next(p) = NULL;
13      prev(p) = NULL;
14      return p;
15  }
16
17  void insertLast(List &L, adr p) {
18      if (first(L) != NULL && last(L) != NULL) {
19          prev(p) = last(L);
20          next(last(L)) = p;
21          last(L) = p;
22      } else {
23          first(L) = p;
24          last(L) = p;
25      }
26  }
27
28  void showAllData(List L) {
29      adr p;
30      int i;
31
32      if (first(L) != NULL && last(L) != NULL) {
33          p = first(L);
34          i = 1;
35          while (p != NULL) {
36              cout << "[" << i << "]" ";
37              cout << "Nasabah: " << info(p).nasabah << ", ";
38              cout << "No Rekening: " << info(p).rekening << ", ";
39              cout << "Saldo: " << info(p).saldo << endl;
40              p = next(p);
41              i++;
42          }
43      } else {
44          cout << "List Kosong!" << endl;
45      }
46      cout << endl;
47  }
48
49  //NIM digit = 9 % 3 = 0
50  bool searching(List L, infotype x) {
51      bool ketemu;
52      adr p;
53
54      ketemu = false;
55      p = first(L);
56      while (p != NULL) {
57          if (info(p).nasabah == x.nasabah && info(p).rekening == x.rekening) {
58              ketemu = true;
59              break;
60          } else {
61              p = next(p);
62          }
63      }
64      return ketemu;
65  }
66
67  int selectMenu() {
68      cout << "===== MENU =====" << endl;
69      cout << "1. Menambah N data baru" << endl;
70      cout << "2. Menampilkan semua data" << endl;
71      cout << "3. Mencari nasabah" << endl;
72      cout << "0. Exit" << endl;
73      cout << "Pilihan Menu: ";
74
75      int input;
76      cin >> input;
77
78      return input;
79  }

```

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Main.cpp

```
bankh x *bank.cpp x main.cpp x
1  #include "bank.h"
2
3  int main(){
4      List L;
5      create_list(L);
6      int pilihan;
7      infotype data;
8
9      pilihan = selectMenu();
10     while (pilihan != 0){
11         switch(pilihan){
12             case 1:
13                 adr p;
14                 char pilihanKembali;
15                 bool status;
16                 status = true;
17                 while (status == true){
18                     int n, i;
19                     cout << "Jumlah data yang ditambahkan: ";
20                     cin >> n;
21                     for (i=1; i<=n; i++){
22                         cout << "Masukkan data baru ke-" << i << endl;
23                         cout << "Masukkan nama nasabah: ";
24                         cin >> data.nasabah;
25                         cout << "Masukkan nomor rekening: ";
26                         cin >> data.rekening;
27                         cout << "Masukkan saldo: ";
28                         cin >> data.saldo;
29                         p = newElement(data);
30                         insertLast(L, p);
31                         cout << endl;
32                     }
33                     cout << "Kembali ke menu utama?(Y/N): ";
34                     cin >> pilihanKembali;
35                     cout << endl;
36                     if (pilihanKembali == 'Y'){
37                         status = false;
38                     }
39                 }
40                 break;
41             case 2:
42                 showAllData(L);
43                 break;
44             case 3:
45                 bool ketemu;
46                 cout << "Masukkan nama nasabah: ";
47                 cin >> data.nasabah;
48                 cout << "Masukkan nomor rekening: ";
49                 cin >> data.rekening;
50                 ketemu = searching(L, data);
51                 if (ketemu == true){
52                     cout << "Nasabah: " << data.nasabah << ", No Rekening: " << data.rekening << ", Saldo Rahasia -> Data ditemukan" << endl;
53                 }else{
54                     cout << "Nasabah: " << data.nasabah << ", No Rekening: " << data.rekening << ", Saldo Rahasia -> Data tidak ditemukan" << endl;
55                 }
56                 cout << endl;
57                 break;
58         }
59         pilihan = selectMenu();
60         cout << endl;
61     }
62     return 0;
63 }
```

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Hasil Output:

```
"C:\Users\haikal\Documents\Kuliah\Semester 3\Strukdat\TP6\TP6\bin\Debug\TP6.exe"
===== MENU =====
1. Menambah N data baru
2. Menampilkan semua data
3. Mencari nasabah
0. Exit
Pilihan Menu: 1
Jumlah data yang ditambahkan: 2
Masukkan data baru ke-1
Masukkan nama nasabah: Ucup
Masukkan nomor rekening: 123
Masukkan saldo: 10000

Masukkan data baru ke-2
Masukkan nama nasabah: Popo
Masukkan nomor rekening: 456
Masukkan saldo: 100000

Kembali ke menu utama?(Y/N): Y

===== MENU =====
1. Menambah N data baru
2. Menampilkan semua data
3. Mencari nasabah
0. Exit
Pilihan Menu: 2

[1] Nasabah: Ucup, No Rekening: 123, Saldo: 10000
[2] Nasabah: Popo, No Rekening: 456, Saldo: 100000

===== MENU =====
1. Menambah N data baru
2. Menampilkan semua data
3. Mencari nasabah
0. Exit
Pilihan Menu: 3

Masukkan nama nasabah: Popo
Masukkan nomor rekening: 456
Nasabah: Popo, No Rekening: 456, Saldo Rahasia -> Data ditemukan

===== MENU =====
1. Menambah N data baru
2. Menampilkan semua data
3. Mencari nasabah
0. Exit
Pilihan Menu: 0

Process returned 0 (0x0)   execution time : 87.791 s
Press any key to continue.
```