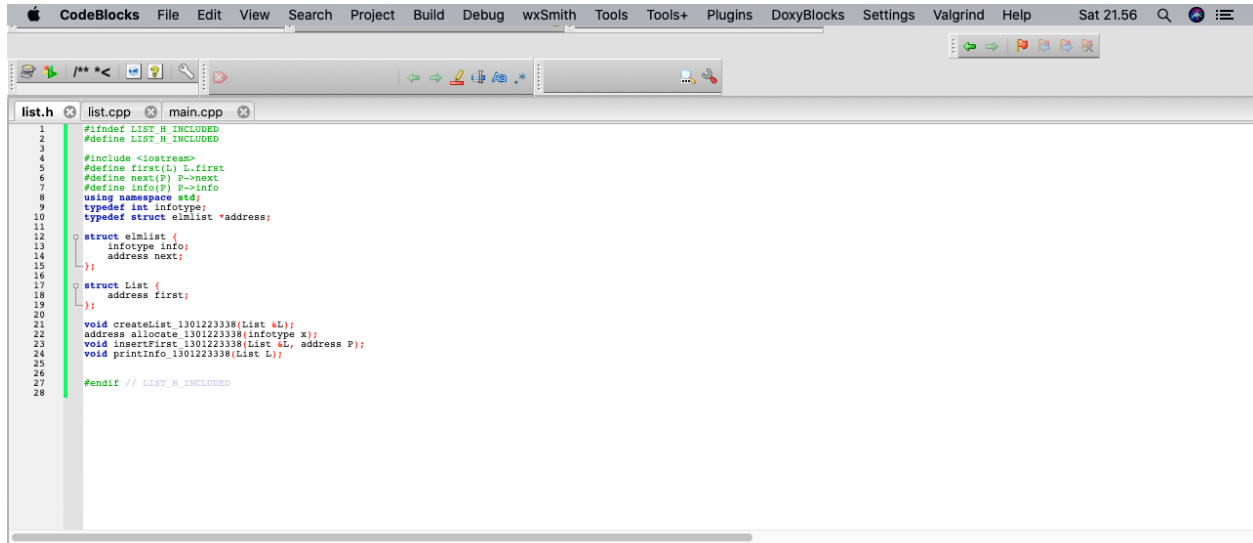


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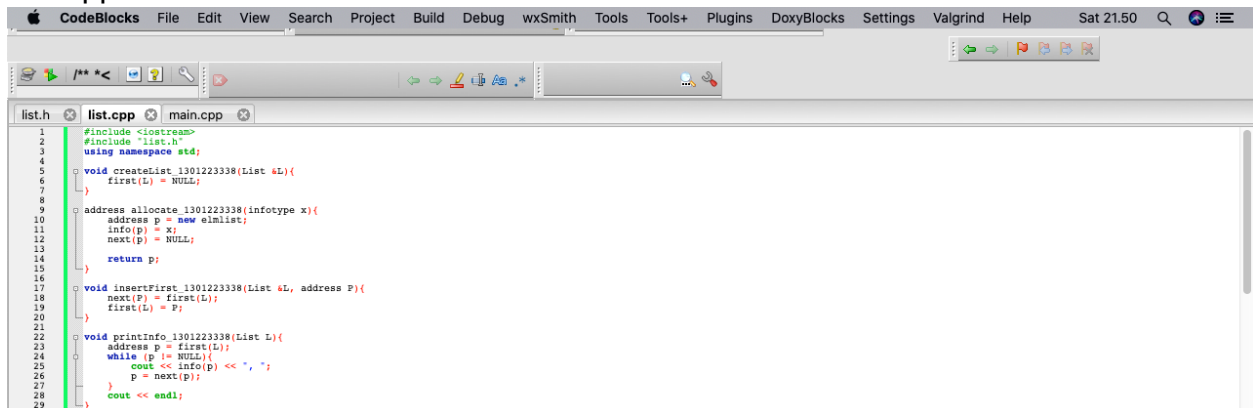
## TP MODUL 4

### List.h



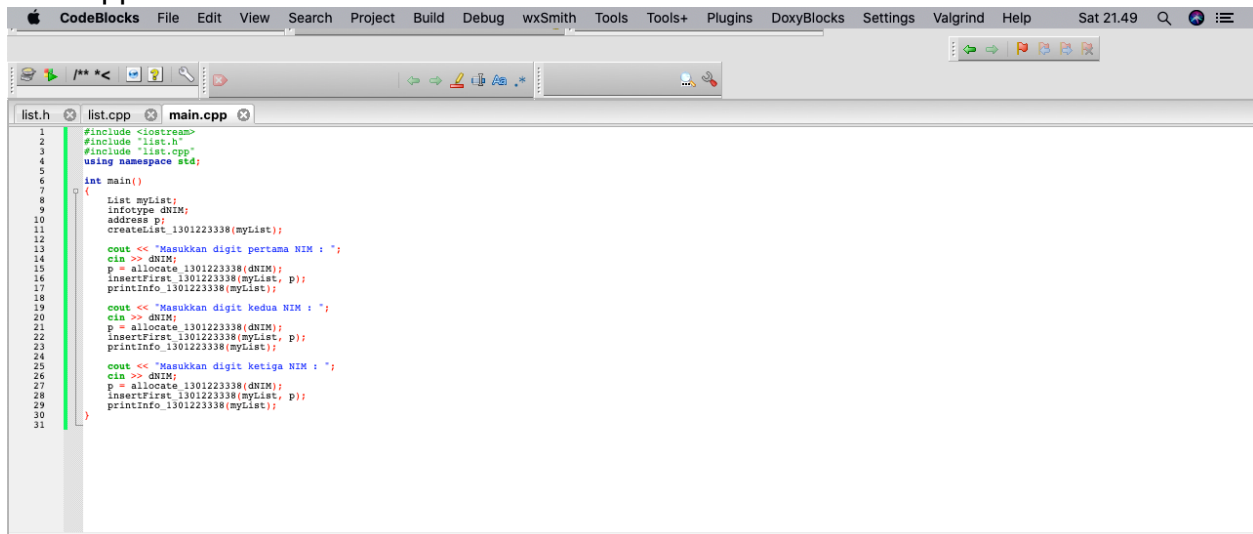
```
1  #ifndef LIST_H_INCLUDED
2  #define LIST_H_INCLUDED
3
4  #include <iostream>
5  #define first(L) L->first
6  #define next(P) P->next
7  #define info(P) P->info
8  using namespace std;
9  typedef int infotype;
10 typedef struct elmlist *address;
11
12 struct elmlist {
13     infotype info;
14     address next;
15 };
16
17 struct List {
18     address first;
19 };
20
21 void createList_1301223338(List &L);
22 address allocate_1301223338(infotype x);
23 void insertFirst_1301223338(List &L, address P);
24 void printInfo_1301223338(List L);
25
26 #endif // LIST_H_INCLUDED
```

### List.cpp



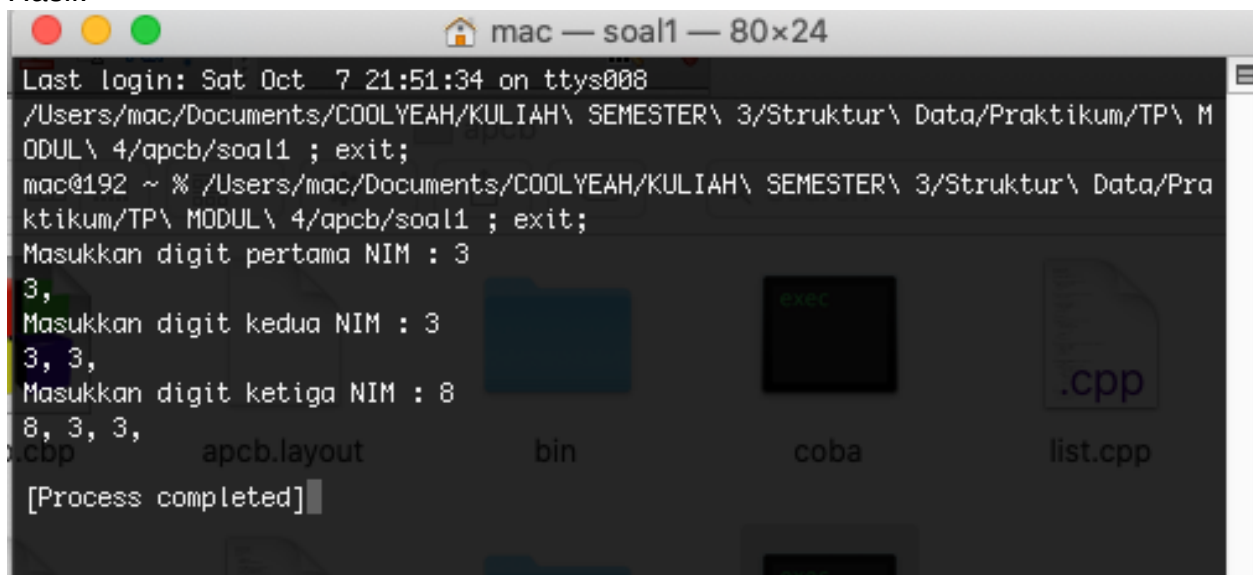
```
1  #include <iostream>
2  #include "list.h"
3  using namespace std;
4
5  void createList_1301223338(List &L){
6      first(L) = NULL;
7  }
8
9  address allocate_1301223338(infotype x){
10     address p = new elmlist;
11     info(p) = x;
12     next(p) = NULL;
13     return p;
14 }
15
16 void insertFirst_1301223338(List &L, address P){
17     next(P) = first(L);
18     first(L) = P;
19 }
20
21 void printInfo_1301223338(List L){
22     address p = first(L);
23     while (p != NULL){
24         cout << info(p) << ", ";
25         p = next(p);
26     }
27     cout << endl;
28 }
29
```

## Main.cpp



```
1 #include <iostream>
2 #include "list.h"
3 #include "list.cpp"
4 using namespace std;
5
6 int main()
7 {
8     List myList;
9     infotype dNIM;
10    address p;
11    createList_1301223338(myList);
12
13    cout << "Masukkan digit pertama NIM : ";
14    cin >> dNIM;
15    p = allocate_1301223338(dNIM);
16    insertFirst_1301223338(myList, p);
17    printInfo_1301223338(myList);
18
19    cout << "Masukkan digit kedua NIM : ";
20    cin >> dNIM;
21    p = allocate_1301223338(dNIM);
22    insertFirst_1301223338(myList, p);
23    printInfo_1301223338(myList);
24
25    cout << "Masukkan digit ketiga NIM : ";
26    cin >> dNIM;
27    p = allocate_1301223338(dNIM);
28    insertFirst_1301223338(myList, p);
29    printInfo_1301223338(myList);
30
31 }
```

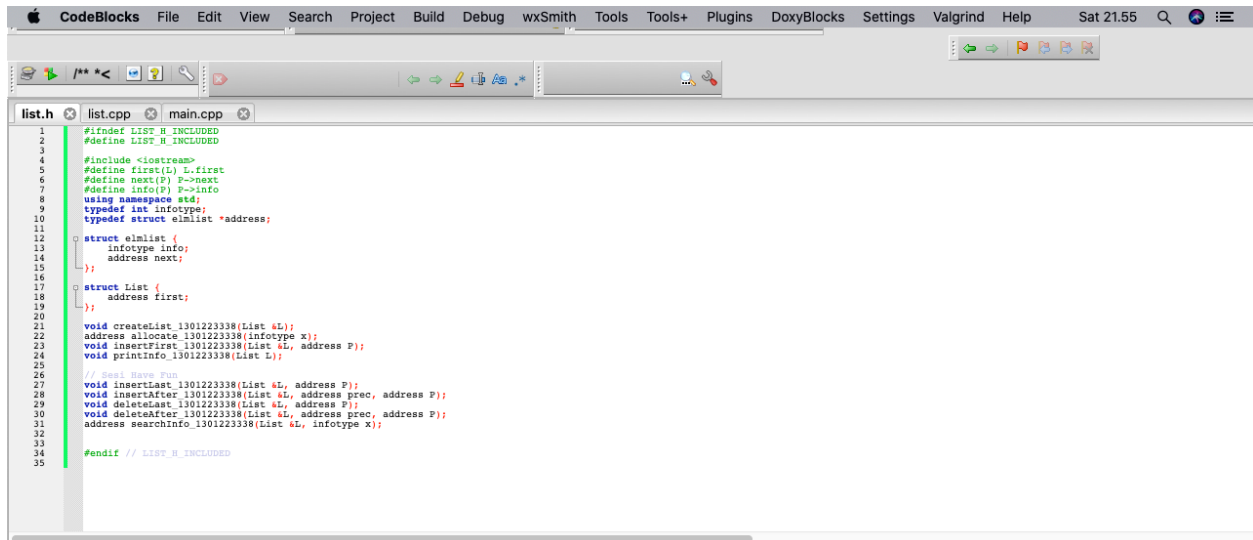
Hasil:



```
mac — soal1 — 80x24
Last login: Sat Oct 7 21:51:34 on ttys008
/Users/mac/Documents/COOLYEAH/KULIAH\ SEMESTER\ 3/Struktur\ Data/Praktikum/TP\ M
ODUL\ 4/apcb/soal1 ; exit;
mac@192 ~ % /Users/mac/Documents/COOLYEAH/KULIAH\ SEMESTER\ 3/Struktur\ Data/Pra
ktikum/TP\ MODUL\ 4/apcb/soal1 ; exit;
Masukkan digit pertama NIM : 3
3,
Masukkan digit kedua NIM : 3
3, 3,
Masukkan digit ketiga NIM : 8
8, 3, 3,
[Process completed]
```

# SESI HAVE FUN

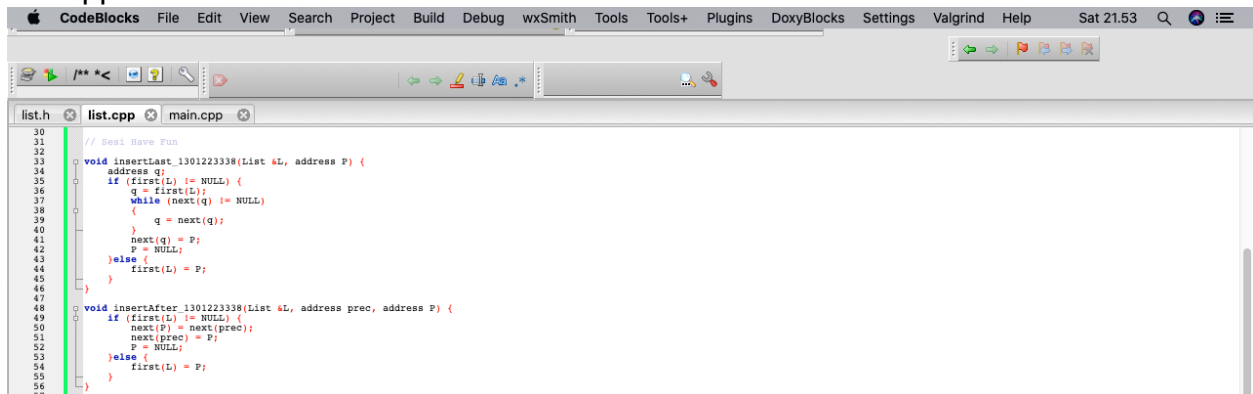
## List.h



The screenshot shows the CodeBlocks IDE with the 'list.h' file open. The code defines a linked list structure and includes functions for creating, inserting, deleting, and searching the list. The IDE interface includes a menu bar (File, Edit, View, Search, Project, Build, Debug, wxSmith, Tools, Tools+, Plugins, DoxyBlocks, Settings, Valgrind, Help) and a toolbar with icons for file operations, compilation, and debugging. The status bar at the bottom indicates 'Sat 21.55'.

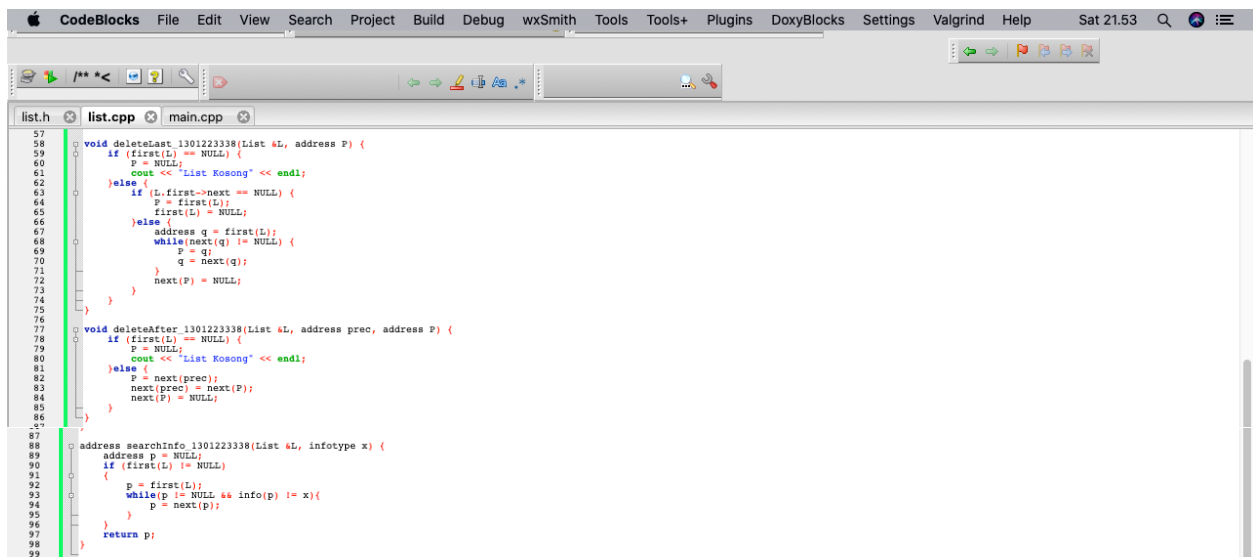
```
1 #ifndef LIST_H_INCLUDED
2 #define LIST_H_INCLUDED
3
4 #include <iostream>
5 #define first(L) L.first
6 #define next(P) P->next
7 #define info(P) P->info
8 using namespace std;
9 typedef int infotype;
10 typedef struct elmlist *address;
11
12 struct elmlist {
13     infotype info;
14     address next;
15 };
16
17 struct List {
18     address first;
19 };
20
21 void createList_1301223338(List &L);
22 address allocate_1301223338(infotype x);
23 void insertFirst_1301223338(List &L, address P);
24 void printInfo_1301223338(List L);
25
26 // Sesi Have Fun
27 void insertLast_1301223338(List &L, address P);
28 void insertAfter_1301223338(List &L, address prec, address P);
29 void deleteLast_1301223338(List &L, address P);
30 void deleteAfter_1301223338(List &L, address prec, address P);
31 address searchInfo_1301223338(List &L, infotype x);
32
33 #endif // LIST_H_INCLUDED
34
35
```

## List.cpp



The screenshot shows the CodeBlocks IDE with the 'List.cpp' file open. The code implements the functions defined in 'list.h'. The IDE interface is consistent with the previous screenshot, showing the same menu bar and toolbar. The status bar indicates 'Sat 21.53'.

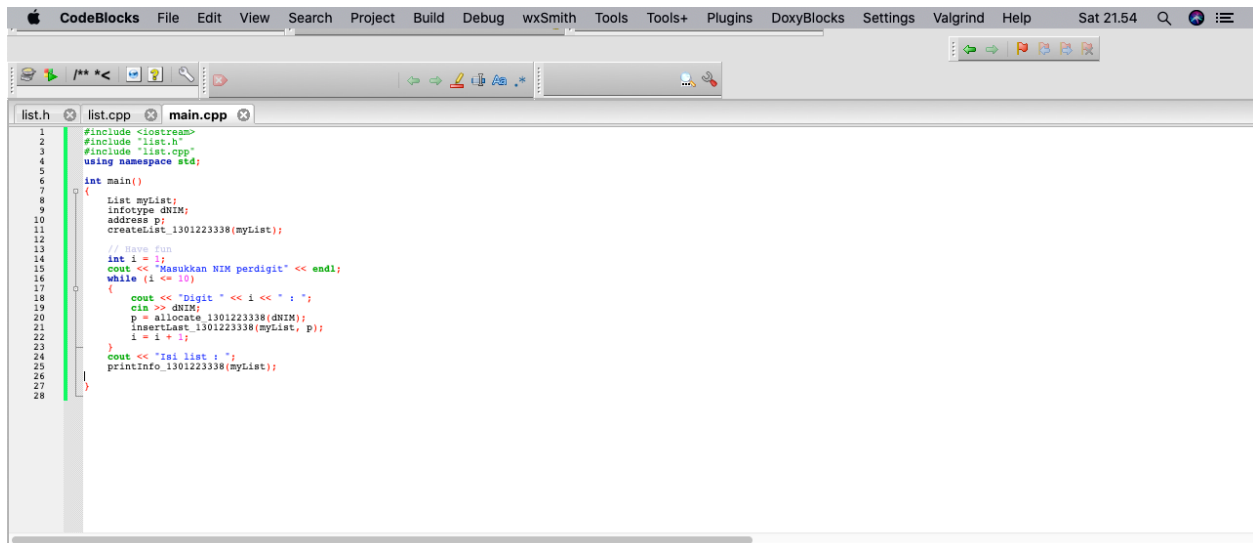
```
30
31 // Sesi Have Fun
32
33 void insertLast_1301223338(List &L, address P) {
34     address q;
35     if (first(L) != NULL) {
36         q = first(L);
37         while (next(q) != NULL)
38             q = next(q);
39         next(q) = P;
40         P = NULL;
41     } else {
42         first(L) = P;
43     }
44 }
45
46 void insertAfter_1301223338(List &L, address prec, address P) {
47     if (first(L) != NULL) {
48         next(P) = next(prec);
49         next(prec) = P;
50         P = NULL;
51     } else {
52         first(L) = P;
53     }
54 }
55
56
57
```



The screenshot shows the CodeBlocks IDE with the 'List.cpp' file open, displaying the implementation of the delete functions and the search function. The IDE interface is consistent with the previous screenshots, showing the same menu bar and toolbar. The status bar indicates 'Sat 21.53'.

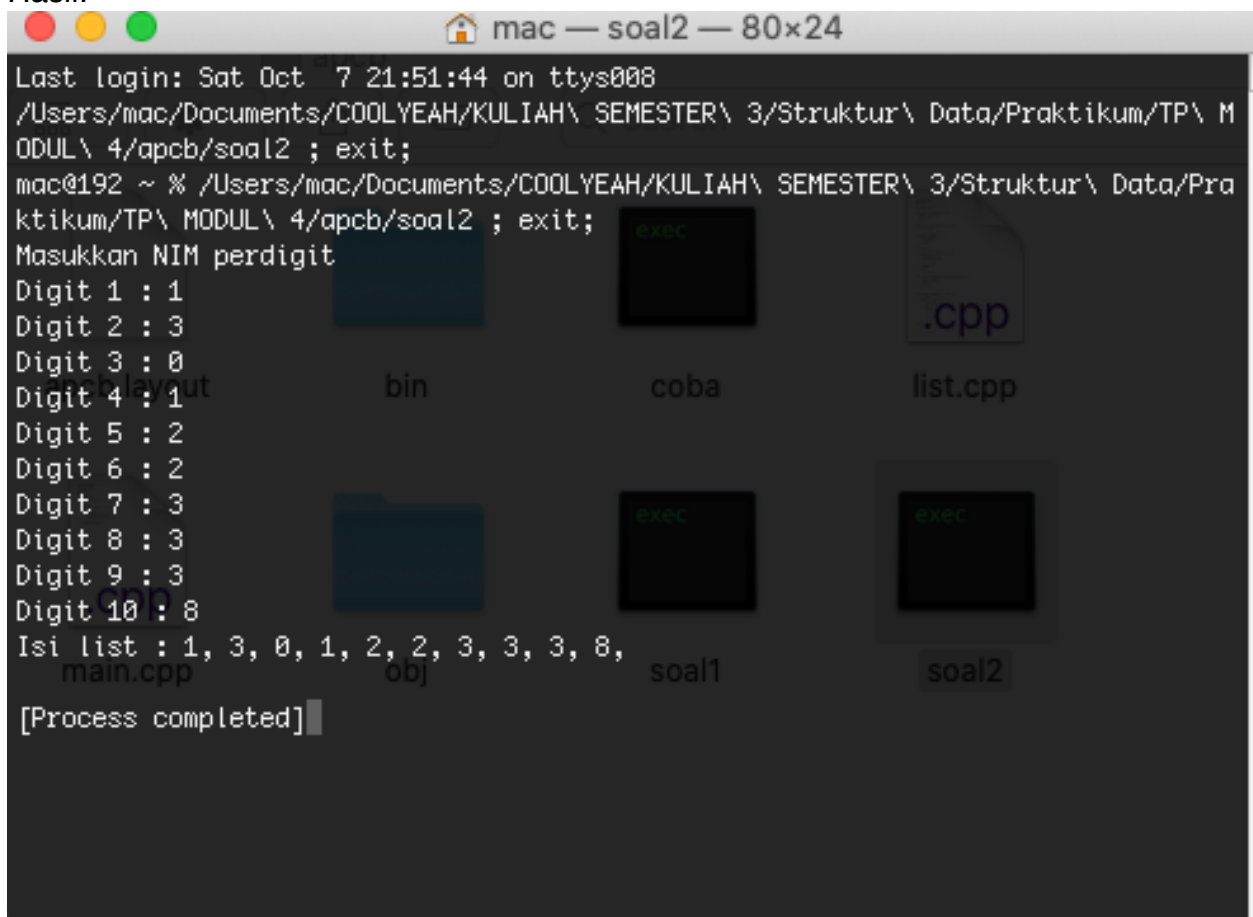
```
57 void deleteLast_1301223338(List &L, address P) {
58     if (first(L) == NULL) {
59         P = NULL;
60         cout << "List Kosong" << endl;
61     } else {
62         if (L.first->next == NULL) {
63             P = first(L);
64             first(L) = NULL;
65         } else {
66             address q = first(L);
67             while (next(q) != NULL) {
68                 P = q;
69                 q = next(q);
70             }
71             next(P) = NULL;
72         }
73     }
74 }
75
76 void deleteAfter_1301223338(List &L, address prec, address P) {
77     if (first(L) == NULL) {
78         P = NULL;
79         cout << "List Kosong" << endl;
80     } else {
81         P = next(prec);
82         next(prec) = next(P);
83         next(P) = NULL;
84     }
85 }
86
87 address searchInfo_1301223338(List &L, infotype x) {
88     address p = NULL;
89     if (first(L) != NULL) {
90         p = first(L);
91         while (p != NULL && info(p) != x) {
92             p = next(p);
93         }
94     }
95     return p;
96 }
97
98
99
```

## Main.cpp



```
1 #include <iostream>
2 #include "list.h"
3 #include "list.cpp"
4 using namespace std;
5
6 int main()
7 {
8     List myList;
9     infotype dNIM;
10    address p;
11    createList_1301223338(myList);
12
13    // Have fun
14    int i = 1;
15    cout << "Masukkan NIM perdigit" << endl;
16    while (i <= 10)
17    {
18        cout << "Digit " << i << " : ";
19        cin >> dNIM;
20        p = allocate_1301223338(dNIM);
21        insertLast_1301223338(myList, p);
22        i = i + 1;
23    }
24    cout << "Isi list : ";
25    printInfo_1301223338(myList);
26
27 }
```

Hasil:



```
mac — soal2 — 80x24
Last login: Sat Oct 7 21:51:44 on ttys008
/Users/mac/Documents/COOLYEAH/KULIAH\ SEMESTER\ 3/Struktur\ Data/Praktikum/TP\ M
ODUL\ 4/apcb/soal2 ; exit;
mac@192 ~ % /Users/mac/Documents/COOLYEAH/KULIAH\ SEMESTER\ 3/Struktur\ Data/Pra
ktikum/TP\ MODUL\ 4/apcb/soal2 ; exit;
Masukkan NIM perdigit
Digit 1 : 1
Digit 2 : 3
Digit 3 : 0
Digit 4 : 1
Digit 5 : 2
Digit 6 : 2
Digit 7 : 3
Digit 8 : 3
Digit 9 : 3
Digit 10 : 8
Isi list : 1, 3, 0, 1, 2, 2, 3, 3, 3, 8,
[Process completed]
```