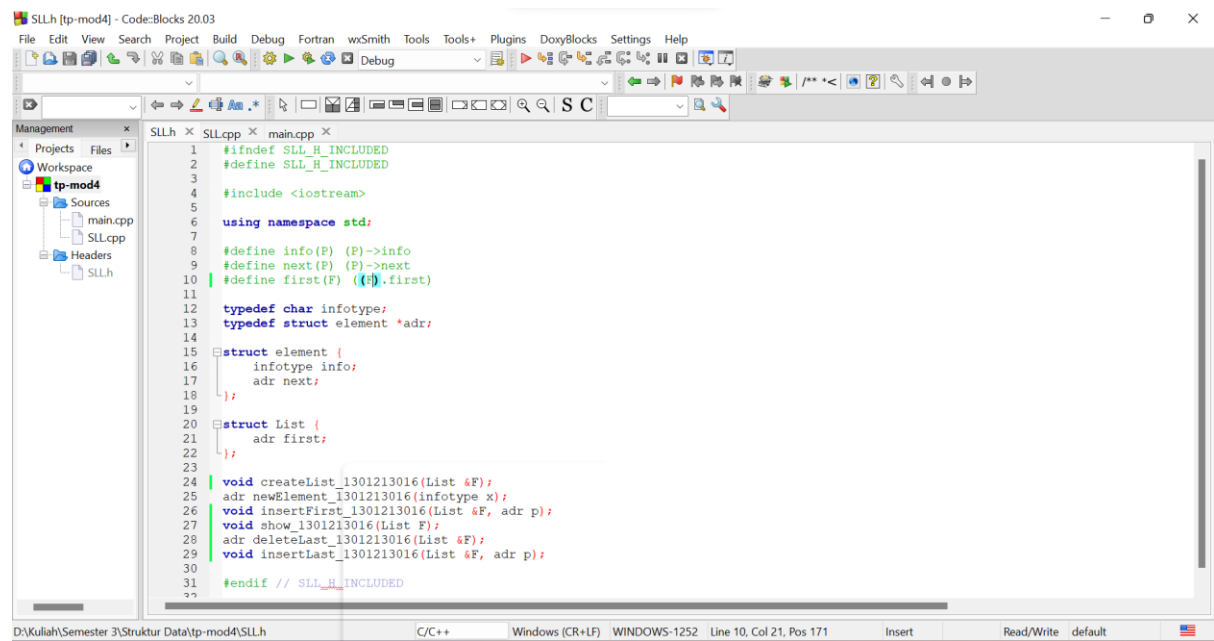
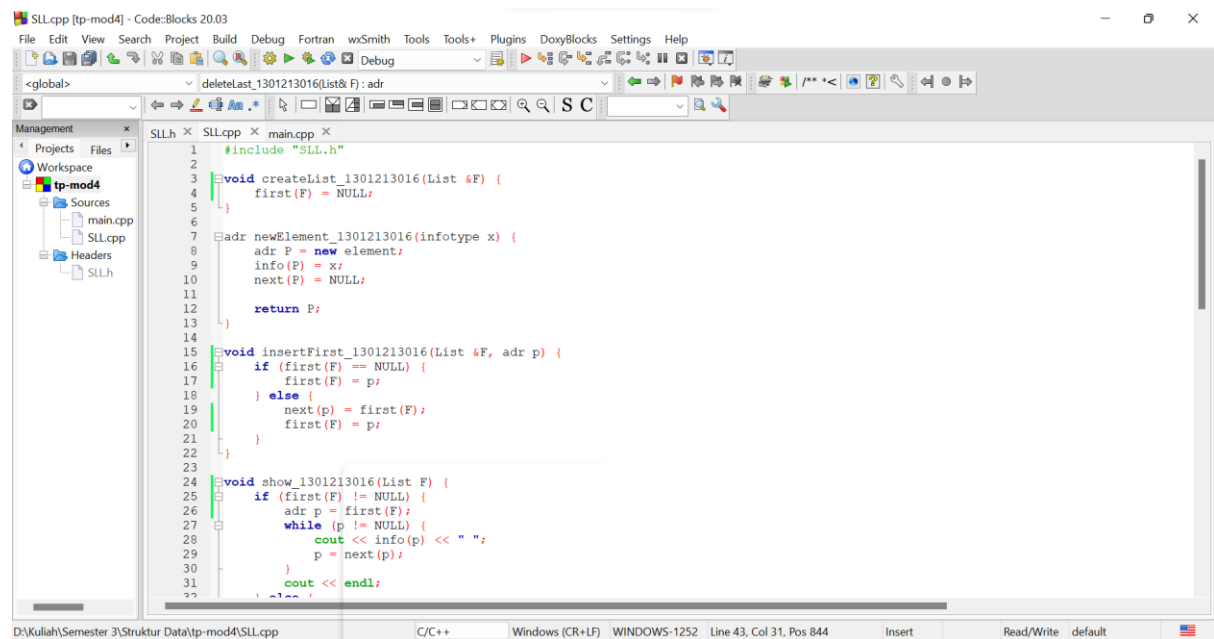


## SLL.h



```
1 #ifndef SLL_H_INCLUDED
2 #define SLL_H_INCLUDED
3
4 #include <iostream>
5
6 using namespace std;
7
8 #define info(P) (P)->info
9 #define next(P) (P)->next
10 #define first(F) ((F).first)
11
12 typedef char infotype;
13 typedef struct element *adr;
14
15 struct element {
16     infotype info;
17     adr next;
18 };
19
20 struct List {
21     adr first;
22 };
23
24 void createList_1301213016(List &F);
25 adr newElement_1301213016(infotype x);
26 void insertFirst_1301213016(List &F, adr p);
27 void show_1301213016(List F);
28 void deleteLast_1301213016(List &F);
29 void insertLast_1301213016(List &F, adr p);
30
31 #endif // SLL_H_INCLUDED
```

## SLL.cpp



```
1 #include "SLL.h"
2
3 void createList_1301213016(List &F) {
4     first(F) = NULL;
5 }
6
7 adr newElement_1301213016(infotype x) {
8     adr P = new element;
9     info(P) = x;
10    next(P) = NULL;
11
12    return P;
13 }
14
15 void insertFirst_1301213016(List &F, adr p) {
16     if (first(F) == NULL) {
17         first(F) = p;
18     } else {
19         next(p) = first(F);
20         first(F) = p;
21     }
22 }
23
24 void show_1301213016(List F) {
25     if (first(F) != NULL) {
26         adr p = first(F);
27         while (p != NULL) {
28             cout << info(p) << " ";
29             p = next(p);
30         }
31         cout << endl;
32     }
33 }
```

SLLcpp [tp-mod4] - Code::Blocks 20.03

File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help

<global> deleteLast\_1301213016(List& F): adr

Management x  
Projects Files  
Workspace  
tp-mod4  
Sources  
main.cpp  
SLLcpp  
Headers  
SLLh

```
23  
24 void show_1301213016(List F) {  
25     if (first(F) != NULL) {  
26         adr p = first(F);  
27         while (p != NULL) {  
28             cout << info(p) << " ";  
29             p = next(p);  
30         }  
31         cout << endl;  
32     } else {  
33         cout << "List Kosong" << endl;  
34     }  
35 }  
36  
37 adr deleteLast_1301213016(List &F) {  
38     adr p, q;  
39  
40     if (first(F) == NULL) {  
41         p = NULL;  
42         cout << "List Kosong" << endl;  
43     } else if (next(first(F)) != NULL) {  
44         p = first(F);  
45         first(F) = NULL;  
46     } else {  
47         q = first(F);  
48         p = first(F);  
49         while (next(p) != NULL) {  
50             q = p;  
51             p = next(p);  
52         }  
53         next(q) = NULL;  
54     }  
55 }
```

D:\Kuliah\Semester 3\Struktur Data\tp-mod4\SLLcpp C/C++ Windows (CR+LF) WINDOWS-1252 Line 43, Col 31, Pos 844 Insert Read/Write default

SLLcpp [tp-mod4] - Code::Blocks 20.03

File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help

<global> deleteLast\_1301213016(List& F): adr

Management x  
Projects Files  
Workspace  
tp-mod4  
Sources  
main.cpp  
SLLcpp  
Headers  
SLLh

```
37 adr deleteLast_1301213016(List &F) {  
38     adr p, q;  
39  
40     if (first(F) == NULL) {  
41         p = NULL;  
42         cout << "List Kosong" << endl;  
43     } else if (next(first(F)) != NULL) {  
44         p = first(F);  
45         first(F) = NULL;  
46     } else {  
47         q = first(F);  
48         p = first(F);  
49         while (next(p) != NULL) {  
50             q = p;  
51             p = next(p);  
52         }  
53         next(q) = NULL;  
54     }  
55     return p;  
56 }  
57  
58  
59 adr deleteFirst_1301213016(List &F) {  
60     adr p;  
61  
62     if (first(F) == NULL) {  
63         p = NULL;  
64         cout << "List Kosong" << endl;  
65     } else {  
66         p = first(F);  
67         first(F) = next(p);  
68         cout << " " << endl;  
69     }  
70 }
```

D:\Kuliah\Semester 3\Struktur Data\tp-mod4\SLLcpp C/C++ Windows (CR+LF) WINDOWS-1252 Line 43, Col 31, Pos 844 Insert Read/Write default

The screenshot shows the Code::Blocks 20.03 IDE with the file SLL.cpp open. The project is named 'tp-mod4'. The code defines two functions for a linked list:

```
57 }
58
59 void deleteLast_1301213016(List &F) {
60     adr p;
61
62     if (first(F) == NULL) {
63         p = NULL;
64         cout << "List Kosong" << endl;
65     } else {
66         p = first(F);
67         first(F) = next(p);
68         next(p) = NULL;
69     }
70
71     return p;
72 }
73
74 void insertLast_1301213016(List &F, adr p) {
75     adr q;
76
77     if (first(F) == NULL) {
78         first(F) = p;
79     } else {
80         q = first(F);
81         while (next(q) != NULL) {
82             q = next(q);
83         }
84         next(q) = p;
85     }
86 }
87 }
```

The status bar at the bottom indicates the file path is D:\Kuliah\Semester 3\Struktur Data\tp-mod4\SLL.cpp, the language is C/C++, and the current line is 43, column 31, position 844.

## main.cpp

The screenshot shows the Code::Blocks 20.03 IDE with the file main.cpp open. The code demonstrates the usage of the linked list functions defined in SLL.h:

```
1 #include "SLL.h"
2
3 using namespace std;
4
5 int main()
6 {
7     // createList
8     List FAR;
9     cout << "first(FAR) sebelum createList : " << first(FAR) << endl;
10
11     createList_1301213016(FAR);
12     cout << "first(FAR) setelah createList : " << first(FAR) << endl;
13     cout << endl;
14
15     // newElement
16     adr p;
17     p = newElement_1301213016('A');
18     cout << "Info(P): " << info(p) << endl;
19     cout << "Next(P): " << next(p) << endl;
20     cout << endl;
21
22     // insertFirst
23     cout << "first(FAR) sebelum insertFirst: " << first(FAR) << endl;
24     insertFirst_1301213016(FAR, p);
25     cout << "first(FAR) setelah insertFirst: " << first(FAR) << endl;
26     cout << "info first(FAR): " << info(first(FAR)) << endl;
27
28     p = newElement_1301213016('B');
29     insertFirst_1301213016(FAR, p);
30     cout << "info first(FAR): " << info(first(FAR)) << endl;
31     cout << endl;
32 }
```

The status bar at the bottom indicates the file path is D:\Kuliah\Semester 3\Struktur Data\tp-mod4\main.cpp, the language is C/C++, and the current line is 60, column 1, position 1551.

```

40
41 // deleteLast
42 p = deleteLast_1301213016(FAR);
43 show_1301213016(FAR);
44 cout << info(p) << endl << endl;
45
46 p = deleteLast_1301213016(FAR);
47 show_1301213016(FAR);
48 cout << info(p) << endl << endl;
49
50 p = deleteLast_1301213016(FAR);
51 show_1301213016(FAR);
52 cout << info(p) << endl << endl;
53
54 // insertLast
55 p = newElement_1301213016('D');
56 insertLast_1301213016(FAR, p);
57 cout << info(p) << endl;
58 show_1301213016(FAR);
59 cout << endl;
60
61 p = newElement_1301213016('E');
62 insertLast_1301213016(FAR, p);
63 cout << info(p) << endl;
64 show_1301213016(FAR);
65 cout << endl;
66
67 p = newElement_1301213016('F');
68 insertLast_1301213016(FAR, p);
69 cout << info(p) << endl;
70 show_1301213016(FAR);
71 cout << endl;

```

```

47 show_1301213016(FAR);
48 cout << info(p) << endl << endl;
49
50 p = deleteLast_1301213016(FAR);
51 show_1301213016(FAR);
52 cout << info(p) << endl << endl;
53
54 // insertLast
55 p = newElement_1301213016('D');
56 insertLast_1301213016(FAR, p);
57 cout << info(p) << endl;
58 show_1301213016(FAR);
59 cout << endl;
60
61 p = newElement_1301213016('E');
62 insertLast_1301213016(FAR, p);
63 cout << info(p) << endl;
64 show_1301213016(FAR);
65 cout << endl;
66
67 p = newElement_1301213016('F');
68 insertLast_1301213016(FAR, p);
69 cout << info(p) << endl;
70 show_1301213016(FAR);
71 cout << endl;
72
73 cout << endl;
74
75 return 0;
76
77

```

Output

"D:\Kuliah\Semester 3\Struktur Data\tp-mod4\bin\Debug\tp-mod4.exe"

first(FAR) sebelum createlist :0x10  
first(FAR) setelah createlist :0

Info(P): A  
Next(P): 0

first(FAR) sebelum insertFirst: 0  
first(FAR) setelah insertFirst: 0xf66ea0  
info first(FAR): A  
info first(FAR): B

B A  
C B A

C B  
A  
C  
B

List Kosong  
C

D  
D  
E  
D E

F  
D E F

Process returned 0 (0x0) execution time : 0.066 s  
Press any key to continue.