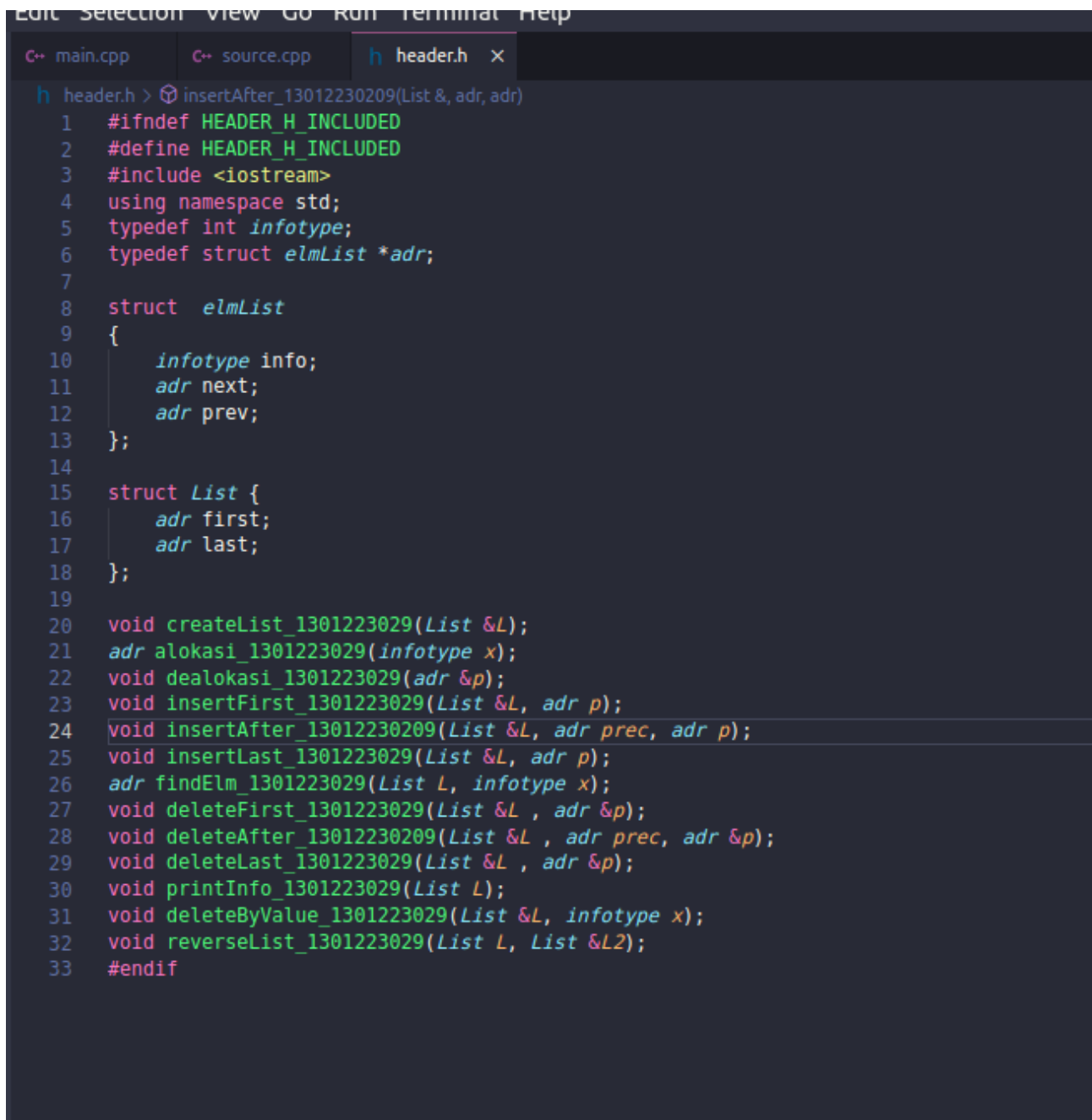


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1301223029  
TP MOD 8

<https://github.com/mufrad2004/TP-STD/tree/main/TP-8>

header.h

<https://github.com/mufrad2004/TP-STD/blob/main/TP-8/header.h>



```
h header.h > insertAfter_13012230209(List &, adr, adr)
1  #ifndef HEADER_H_INCLUDED
2  #define HEADER_H_INCLUDED
3  #include <iostream>
4  using namespace std;
5  typedef int infotype;
6  typedef struct elmList *adr;
7
8  struct elmList
9  {
10     infotype info;
11     adr next;
12     adr prev;
13 };
14
15 struct List {
16     adr first;
17     adr last;
18 };
19
20 void createList_1301223029(List &L);
21 adr alokasi_1301223029(infotype x);
22 void dealokasi_1301223029(adr &p);
23 void insertFirst_1301223029(List &L, adr p);
24 void insertAfter_13012230209(List &L, adr prec, adr p);
25 void insertLast_1301223029(List &L, adr p);
26 adr findElm_1301223029(List L, infotype x);
27 void deleteFirst_1301223029(List &L, adr &p);
28 void deleteAfter_13012230209(List &L, adr prec, adr &p);
29 void deleteLast_1301223029(List &L, adr &p);
30 void printInfo_1301223029(List L);
31 void deleteByValue_1301223029(List &L, infotype x);
32 void reverseList_1301223029(List L, List &L2);
33 #endif
```

source.cpp

<https://github.com/mufrad2004/TP-STD/blob/main/TP-8/source.cpp>

```
File Edit Selection View Go Run Terminal Help
C++ main.cpp C++ source.cpp X h header.h
C++ source.cpp > createList_1301223029(List &)
1  #include "header.h"
2  void createList_1301223029(List &L){
3      L.first = NULL;
4      L.last = NULL;
5  }
6
7  adr alokasi_1301223029(infotype x){
8      adr p;
9      p = new elmList;
10     p->info = x;
11     p->next = NULL;
12     p->prev = NULL;
13
14     return p;
15 }
16
17 void dealokasi_1301223029(adr &p){
18     delete p;
19     p = NULL;
20 }
21
22 void insertFirst_1301223029(List &L, adr p){
23     if (L.first == NULL){
24         L.first = p;
25         L.last = p;
26         p->next = L.first;
27         p->prev = L.last;
28     }else{
29         p->next = L.first;
30         L.first->prev = p;
31         L.first = p;
32         p->prev = L.last;
33         L.last->next = L.first;
34     }
35 }
36
37 void insertLast_1301223029(List &L, adr p){
38     if (L.first == NULL){
39         L.first = p;
40         L.last = p;
41         p->next = L.first;
42         p->prev = L.last;
43     }else {
44         p->prev = L.last;
45         L.last->next = p;
46         L.last = p;
47         p->next = L.first;
48         L.first->prev = L.last;
49     }
50 }
51 }
```

```
C++ main.cpp  C++ source.cpp X  h header.h
C++ source.cpp > createList_1301223029(List &)
51 }
52
53 void insertAfter_1301223029(List &L, adr prec, adr p){
54     if (prec->next == L.first){
55         // * elemen akhir atau cuman ada 1 elemen
56         insertLast_1301223029(L,p);
57     }else {
58         p->prev = prec;
59         p->next = prec->next;
60         prec->next->prev = p;
61         prec->next = p;
62     }
63 }
64 }
65
66
67 adr findElm_1301223029(List L, infotype x){
68     adr p ;
69     int lap = 0 ;
70     if (L.first == NULL){
71         p = NULL;
72         return p;
73     }else {
74         p = L.first;
75         while (lap != 1){
76             if (p->info == x ){
77                 return p;
78             }else {
79                 p = p->next;
80             }
81             if (p == L.first){
82                 lap++;
83                 p = NULL;
84             }
85         }
86     }
87     return p;
88 }
89
90
91 void deleteFirst_1301223029(List &L , adr &p){
92     if (L.first == NULL){
93         cout << "List kosong" <<endl;
94     }else if (L.first == L.last) {
95         // * Cuman 1 elemen
96         p = L.first;
97         L.first = NULL;
98         L.last = NULL;
99     }else {
100         // * banyak elemen
101         p = L.first;
102         L.first = p->next;
103         L.first->prev = L.last;
104         L.last->next = L.first;
105     }
106 }
107 }
108 }
```

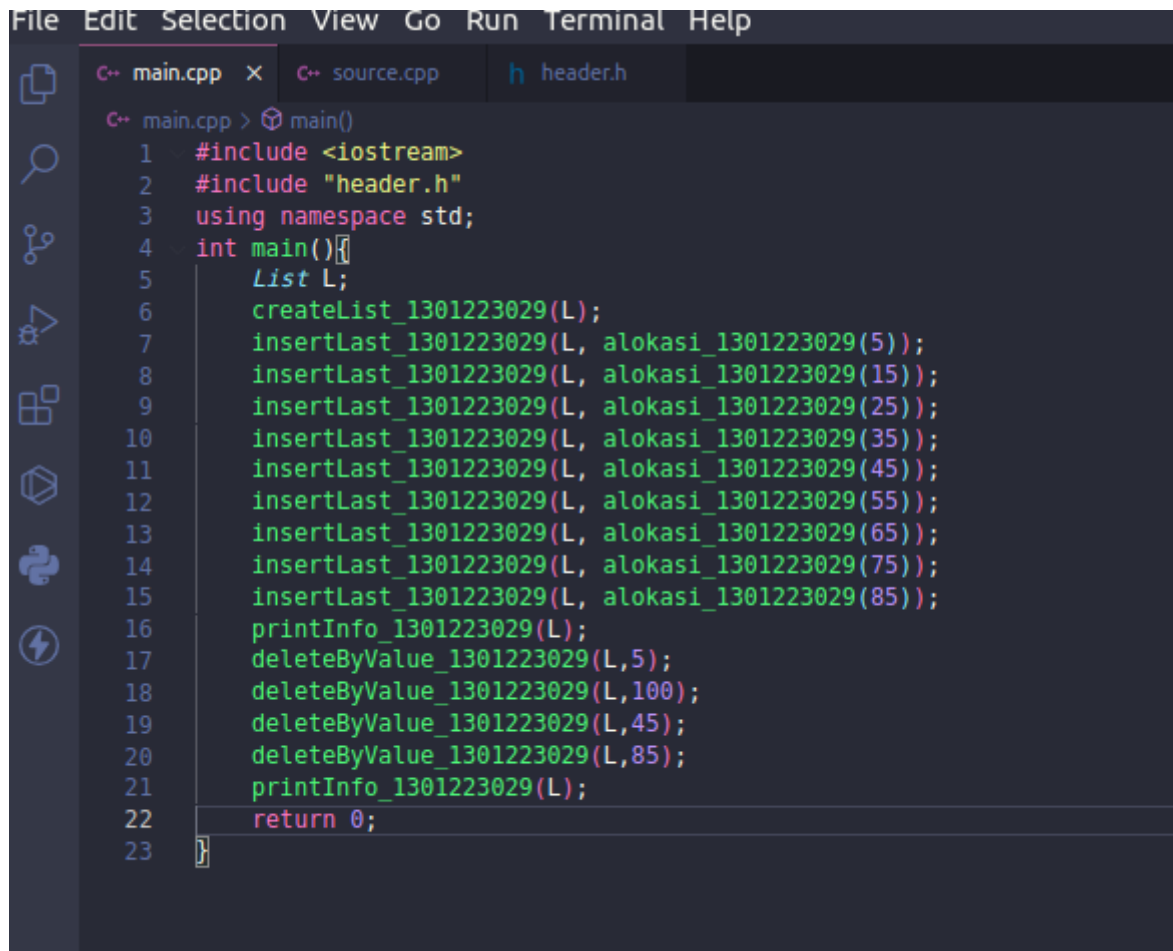
```
main.cpp source.cpp X header.h
source.cpp > createList_1301223029(List &)

108
109 void deleteLast_1301223029(List &L , adr &p){
110     if (L.first == NULL){
111         cout << "List Kosong" << endl;
112     }else if (L.first == L.last) {
113         // * Kalo cuman ada 1 elemen
114         p = L.last;
115         L.first = NULL;
116         L.last= NULL;
117     }else {
118         // * kalo elemennya banyak
119         p = L.last;
120         L.last = p->prev ;
121         L.first->prev = L.last;
122         L.last->next = L.first;
123     }
124 }
125
126
127
128 void deleteAfter_1301223029(List &L , adr prec, adr &p){
129     if (L.first == NULL){
130         cout << "List kosong"<<endl;
131     }else if (prec->next == L.first){
132         // * Kalo prec ada di elemen akhir atau elemen cuman 1
133         deleteLast_1301223029(L,p);
134     }else {
135         p = prec->next;
136         prec->next= p->next;
137         p->next->prev = prec;
138         L.last = L.first->prev;
139     }
140 }
141
142
143
144
145 void printInfo_1301223029(List L){
146     adr p ;
147     int lap= 0;
148     if (L.first == NULL){
149         cout << "List Kosong" << endl;
150     }else {
151         p = L.first;
152         while (lap != 1 ){
153             cout << p->info << " ";
154             p = p->next;
155             if (p == L.first){
156                 lap++;
157             }
158         }
159     }
160     cout << endl;
161 }
162
163 void deleteByValue_1301223029(List &L, infotype x){
164     adr p;
```

```
C++ main.cpp  C++ source.cpp X  h header.h
C++ source.cpp > createList_1301223029(List &)
162
163 void deleteByValue_1301223029(List &L, infotype x){
164     adr p;
165     adr temp;
166     int lap = 0;
167     if (L.first == NULL){
168         cout << "List Kosong" << endl;
169     }else {
170         p = L.first;
171         while (lap != 1 ){
172             if (p->info == x){
173                 if (p == L.first){
174                     // * kalo yang sama di awal
175                     deleteFirst_1301223029(L,temp);
176                 }else if (p == L.last ){
177                     // * Kalo yang sama di akhir
178                     deleteLast_1301223029(L,temp);
179                 }else {
180                     // * kalo yang sama di tengah tengah
181                     deleteAfter_1301223029(L, p->prev , temp);
182                 }
183             }
184             p = p->next;
185             if (p == L.first){
186                 lap++;
187             }
188         }
189     }
190 }
191
192 }
193
194
195 void reverseList_1301223029(List L, List &L2){
196     adr p;
197     adr duplikasi;
198     int lap= 0;
199     if (L.first == NULL){
200         cout << "List Kosong"<<endl;
201     }else {
202         p = L.last;
203         duplikasi = alokasi_1301223029(p->info);
204         insertLast_1301223029(L2,duplikasi);
205         while (lap != 1){
206             p = p->prev;
207             if (p == L.last){
208                 lap++;
209             }
210         }
211     }
212 }
213
214 }
215 }
216
```

main.cpp

<https://github.com/mufrad2004/TP-STD/blob/main/TP-8/main.cpp>



The image shows a screenshot of a C++ IDE with a dark theme. The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The tab bar shows three files: main.cpp (active), source.cpp, and header.h. The main.cpp file is open, showing the following code:

```
1  #include <iostream>
2  #include "header.h"
3  using namespace std;
4  int main()
5  {
6      List L;
7      createList_1301223029(L);
8      insertLast_1301223029(L, alokasi_1301223029(5));
9      insertLast_1301223029(L, alokasi_1301223029(15));
10     insertLast_1301223029(L, alokasi_1301223029(25));
11     insertLast_1301223029(L, alokasi_1301223029(35));
12     insertLast_1301223029(L, alokasi_1301223029(45));
13     insertLast_1301223029(L, alokasi_1301223029(55));
14     insertLast_1301223029(L, alokasi_1301223029(65));
15     insertLast_1301223029(L, alokasi_1301223029(75));
16     insertLast_1301223029(L, alokasi_1301223029(85));
17     printInfo_1301223029(L);
18     deleteByValue_1301223029(L, 5);
19     deleteByValue_1301223029(L, 100);
20     deleteByValue_1301223029(L, 45);
21     deleteByValue_1301223029(L, 85);
22     printInfo_1301223029(L);
23     return 0;
24 }
```

output

```
~ /semester-3/St/Minggu-7/TP-8 > on main !6 ?1  
./myprogram  
5 15 25 35 45 55 65 75 85  
15 25 35 55 65 75
```