

# UNGUIDED LAPORAN PRAKTIKUM STUKTUR DATA MODUL 6

## 1. Unguided

#### 4.1. Kode Program :

## doublelist.h

```

1 #ifndef DOUBLELIST_H
2 #define DOUBLELIST_H
3
4 #include <iostream>
5 #include <string>
6 using namespace std;
7
8 struct infoType {
9     string name;
10    string surname;
11    int age;
12 };
13
14 struct ElemList;
15 typedef ElemList* address;
16
17 struct ElemList {
18     infoType info;
19     address next;
20     address prev;
21 };
22
23 struct List {
24     address First;
25     address Last;
26 };
27
28 void CreateList(List &);
29 address allocate(infoType x);
30 void DestroyList(address &);
31 void printInfo(List &);
32 void insertFirst(List &L, address P);
33 address findElem(List &L, infoType x);
34
35 #endif
36

```

## doublelist.cpp

```

1 doublet.h X doublet.cpp X main.cpp X
2
3 //include "doublet.h"
4
5 #include <iostream>
6
7 int main()
8 {
9     //doublet d;
10     //d.setValues(1, 2);
11     //d.print();
12     //d.setValues(3, 4);
13     //d.print();
14     //d.setValues(5, 6);
15     //d.print();
16     //d.setValues(7, 8);
17     //d.print();
18     //d.setValues(9, 10);
19     //d.print();
20     //d.setValues(11, 12);
21     //d.print();
22     //d.setValues(13, 14);
23     //d.print();
24     //d.setValues(15, 16);
25     //d.print();
26     //d.setValues(17, 18);
27     //d.print();
28     //d.setValues(19, 20);
29     //d.print();
30     //d.setValues(21, 22);
31     //d.print();
32     //d.setValues(23, 24);
33     //d.print();
34     //d.setValues(25, 26);
35     //d.print();
36     //d.setValues(27, 28);
37     //d.print();
38     //d.setValues(29, 30);
39     //d.print();
40     //d.setValues(31, 32);
41     //d.print();
42     //d.setValues(33, 34);
43     //d.print();
44     //d.setValues(35, 36);
45     //d.print();
46     //d.setValues(37, 38);
47     //d.print();
48     //d.setValues(39, 40);
49     //d.print();
50     //d.setValues(41, 42);
51     //d.print();
52     //d.setValues(43, 44);
53     //d.print();
54     //d.setValues(45, 46);
55     //d.print();
56     //d.setValues(47, 48);
57     //d.print();
58     //d.setValues(49, 50);
59     //d.print();
60     //d.setValues(51, 52);
61     //d.print();
62     //d.setValues(53, 54);
63     //d.print();
64     //d.setValues(55, 56);
65     //d.print();
66     //d.setValues(57, 58);
67     //d.print();
68     //d.setValues(59, 60);
69     //d.print();
70     //d.setValues(61, 62);
71     //d.print();
72     //d.setValues(63, 64);
73     //d.print();
74     //d.setValues(65, 66);
75     //d.print();
76     //d.setValues(67, 68);
77     //d.print();
78     //d.setValues(69, 70);
79     //d.print();
80     //d.setValues(71, 72);
81     //d.print();
82     //d.setValues(73, 74);
83     //d.print();
84     //d.setValues(75, 76);
85     //d.print();
86     //d.setValues(77, 78);
87     //d.print();
88     //d.setValues(79, 80);
89     //d.print();
90     //d.setValues(81, 82);
91     //d.print();
92     //d.setValues(83, 84);
93     //d.print();
94     //d.setValues(85, 86);
95     //d.print();
96     //d.setValues(87, 88);
97     //d.print();
98     //d.setValues(89, 90);
99     //d.print();
100    //d.setValues(91, 92);
101    //d.print();
102    //d.setValues(93, 94);
103    //d.print();
104    //d.setValues(95, 96);
105    //d.print();
106    //d.setValues(97, 98);
107    //d.print();
108    //d.setValues(99, 100);
109    //d.print();
110    //d.setValues(101, 102);
111    //d.print();
112    //d.setValues(103, 104);
113    //d.print();
114    //d.setValues(105, 106);
115    //d.print();
116    //d.setValues(107, 108);
117    //d.print();
118    //d.setValues(109, 110);
119    //d.print();
120    //d.setValues(111, 112);
121    //d.print();
122    //d.setValues(113, 114);
123    //d.print();
124    //d.setValues(115, 116);
125    //d.print();
126    //d.setValues(117, 118);
127    //d.print();
128    //d.setValues(119, 120);
129    //d.print();
130    //d.setValues(121, 122);
131    //d.print();
132    //d.setValues(123, 124);
133    //d.print();
134    //d.setValues(125, 126);
135    //d.print();
136    //d.setValues(127, 128);
137    //d.print();
138    //d.setValues(129, 130);
139    //d.print();
140    //d.setValues(131, 132);
141    //d.print();
142    //d.setValues(133, 134);
143    //d.print();
144    //d.setValues(135, 136);
145    //d.print();
146    //d.setValues(137, 138);
147    //d.print();
148    //d.setValues(139, 140);
149    //d.print();
150    //d.setValues(141, 142);
151    //d.print();
152    //d.setValues(143, 144);
153    //d.print();
154    //d.setValues(145, 146);
155    //d.print();
156    //d.setValues(147, 148);
157    //d.print();
158    //d.setValues(149, 150);
159    //d.print();
160    //d.setValues(151, 152);
161    //d.print();
162    //d.setValues(153, 154);
163    //d.print();
164    //d.setValues(155, 156);
165    //d.print();
166    //d.setValues(157, 158);
167    //d.print();
168    //d.setValues(159, 160);
169    //d.print();
170    //d.setValues(161, 162);
171    //d.print();
172    //d.setValues(163, 164);
173    //d.print();
174    //d.setValues(165, 166);
175    //d.print();
176    //d.setValues(167, 168);
177    //d.print();
178    //d.setValues(169, 170);
179    //d.print();
180    //d.setValues(171, 172);
181    //d.print();
182    //d.setValues(173, 174);
183    //d.print();
184    //d.setValues(175, 176);
185    //d.print();
186    //d.setValues(177, 178);
187    //d.print();
188    //d.setValues(179, 180);
189    //d.print();
190    //d.setValues(181, 182);
191    //d.print();
192    //d.setValues(183, 184);
193    //d.print();
194    //d.setValues(185, 186);
195    //d.print();
196    //d.setValues(187, 188);
197    //d.print();
198    //d.setValues(189, 190);
199    //d.print();
200    //d.setValues(191, 192);
201    //d.print();
202    //d.setValues(193, 194);
203    //d.print();
204    //d.setValues(195, 196);
205    //d.print();
206    //d.setValues(197, 198);
207    //d.print();
208    //d.setValues(199, 200);
209    //d.print();
210    //d.setValues(201, 202);
211    //d.print();
212    //d.setValues(203, 204);
213    //d.print();
214    //d.setValues(205, 206);
215    //d.print();
216    //d.setValues(207, 208);
217    //d.print();
218    //d.setValues(209, 210);
219    //d.print();
220    //d.setValues(211, 212);
221    //d.print();
222    //d.setValues(213, 214);
223    //d.print();
224    //d.setValues(215, 216);
225    //d.print();
226    //d.setValues(217, 218);
227    //d.print();
228    //d.setValues(219, 220);
229    //d.print();
230    //d.setValues(221, 222);
231    //d.print();
232    //d.setValues(223, 224);
233    //d.print();
234    //d.setValues(225, 226);
235    //d.print();
236    //d.setValues(227, 228);
237    //d.print();
238    //d.setValues(229, 230);
239    //d.print();
240    //d.setValues(231, 232);
241    //d.print();
242    //d.setValues(233, 234);
243    //d.print();
244    //d.setValues(235, 236);
245    //d.print();
246    //d.setValues(237, 238);
247    //d.print();
248    //d.setValues(239, 240);
249    //d.print();
250    //d.setValues(241, 242);
251    //d.print();
252    //d.setValues(243, 244);
253    //d.print();
254    //d.setValues(245, 246);
255    //d.print();
256    //d.setValues(247, 248);
257    //d.print();
258    //d.setValues(249, 250);
259    //d.print();
260    //d.setValues(251, 252);
261    //d.print();
262    //d.setValues(253, 254);
263    //d.print();
264    //d.setValues(255, 256);
265    //d.print();
266    //d.setValues(257, 258);
267    //d.print();
268    //d.setValues(259, 260);
269    //d.print();
270    //d.setValues(261, 262);
271    //d.print();
272    //d.setValues(263, 264);
273    //d.print();
274    //d.setValues(265, 266);
275    //d.print();
276    //d.setValues(267, 268);
277    //d.print();
278    //d.setValues(269, 270);
279    //d.print();
280    //d.setValues(271, 272);
281    //d.print();
282    //d.setValues(273, 274);
283    //d.print();
284    //d.setValues(275, 276);
285    //d.print();
286    //d.setValues(277, 278);
287    //d.print();
288    //d.setValues(279, 280);
289    //d.print();
290    //d.setValues(281, 282);
291    //d.print();
292    //d.setValues(283, 284);
293    //d.print();
294    //d.setValues(285, 286);
295    //d.print();
296    //d.setValues(287, 288);
297    //d.print();
298    //d.setValues(289, 290);
299    //d.print();
300    //d.setValues(291, 292);
301    //d.print();
302    //d.setValues(293, 294);
303    //d.print();
304    //d.setValues(295, 296);
305    //d.print();
306    //d.setValues(297, 298);
307    //d.print();
308    //d.setValues(299, 300);
309    //d.print();
310    //d.setValues(301, 302);
311    //d.print();
312    //d.setValues(
```

## main.cpp

```

1 #include "doublelist.h"
2
3 int main() {
4     List l;
5     CreateList(&l);
6
7     int Jumlah;
8     cout << "Masukkan Jumlah kendaraan yang akan diinput: ";
9     cin >> Jumlah;
10
11     for (int i = 0; i < Jumlah; i++) {
12         InfoType kendaraan;
13         cout << "Masukkan nomor polisi: ";
14         cin >> kendaraan.noPolisi;
15         cout << "Masukkan warna kendaraan: ";
16         cin >> kendaraan.warna;
17         cout << "Masukkan tahun kendaraan: ";
18         cin >> kendaraan.thdBuat;
19
20         // Cara menambah nomor polisi sudah terdapat
21         if (findInfo(l, kendaraan) == nullptr) {
22             insertFirst(l, kendaraan); // menggunakan insertFirst
23         } else {
24             cout << "Nomor polisi sudah terdaftar!\n";
25         }
26     }
27
28     // Tampilkan data list setelah input selesai
29     cout << "DATA LIST l:\n";
30     printInfo(l);
31
32     return 0;
33 }

```

Output dari Kode Program:

```

C:\Users\adri\Documents\Coding\Project\Modul 8\Bait 1\MyProject\Modul 8.exe
Resuskan jumlah kendaraan yang akan diliput: 4

Masukkan nomor polisi: D003
Masukkan warna kendaraan: hitam
Masukkan tahun kendaraan: 90

Masukkan nomor polisi: D003
Masukkan warna kendaraan: putih
Masukkan tahun kendaraan: 70

Masukkan nomor polisi: D001
Masukkan warna kendaraan: merah
Masukkan tahun kendaraan: 80
Nomor polisi sudah terdaftar

Masukkan nomor polisi: D001
Masukkan warna kendaraan: kuning
Masukkan tahun kendaraan: 90

DATA LIST 1
No Polisi : D004
Warna : kuning
Tahun : 90
No Polisi : D003
Warna : putih
Tahun : 70
No Polisi : D001
Warna : hitam

```

## 4.2. Code Program : doublelist.h

```
doublelist.h X doublelist.cpp X main.cpp X
1 #ifndef DOUBLELIST_H
2 #define DOUBLELIST_H
3
4 #include <iostream>
5 #include <string>
6 using namespace std;
7
8 struct infoType {
9     string nopol;
10    string warna;
11    int thobuat;
12};
13
14 struct KiriList {
15    typed KiriList* address;
16};
17
18 struct KiriList {
19    infoType info;
20    address next;
21};
22
23 struct List {
24    address First;
25    address Last;
26};
27
28 void CreateList(List &L);
29 address alokasi(infoType &i);
30 void DoubleList(address &L);
31 void printInfo(List &L);
32 void insertFirst(List &L, address P); // Menambah insertLast dan insertFirst
33 address findElem(List &L, infoType &i);
34
35 #endif
36
```

## doublelist.cpp

```
doublelist.cpp X doublelist.cpp X main.cpp X
1 #include "doublelist.h"
2
3 void CreateList(List &L) {
4     L.First = nullptr;
5     L.Last = nullptr;
6 }
7
8 address alokasi(infoType &i) {
9     address P = new infoType;
10    P->nopol = i.nopol;
11    P->warna = i.warna;
12    P->thobuat = i.thobuat;
13    return P;
14}
15
16 void DoubleList(address &L) {
17     address P;
18     P = nullptr;
19 }
20
21 void printInfo(List &L) {
22     address P = L.First;
23     while (P != nullptr) {
24         cout << "No Polisi : " << P->nopol << endl;
25         cout << "Warna : " << P->warna << endl;
26         cout << "Thobuat : " << P->thobuat << endl;
27         P = P->next;
28     }
29 }
30
31 void insertFirst(List &L, address P) {
32     if (L.First == nullptr) {
33         L.First = P;
34         L.Last = P;
35     } else {
36         P->next = L.First;
37         L.First = P;
38     }
39 }
40
41 address findElem(List &L, infoType &i) {
42     address P = L.First;
43     while (P != nullptr) {
44         if (P->nopol == i.nopol) {
45             return P;
46         }
47         P = P->next;
48     }
49     return nullptr;
50 }
51
```

## main.cpp

```
doublelist.cpp X doublelist.cpp X main.cpp X
1 #include "doublelist.h"
2
3 int main() {
4     List L;
5     CreateList(L);
6
7     // Data yang akan dimasukkan ke database
8     infoType kenderaan1 = {"D001", "Kuning", 98};
9     infoType kenderaan2 = {"D002", "Kuning", 99};
10    infoType kenderaan3 = {"D003", "Kuning", 99};
11
12    insertFirst(L, alokasi(kenderaan1));
13    insertFirst(L, alokasi(kenderaan2));
14    insertFirst(L, alokasi(kenderaan3));
15
16    // Menampilkan Data List awal
17    cout << "DATA LIST awal" << endl;
18    printInfo(L);
19
20    // Input nomor polisi yang akan dicari
21    infoType kenderaanCari;
22    cout << "Masukkan Nomor Polisi yang dicari: ";
23    cin >> kenderaanCari.nopol;
24
25    // Cari data berdasarkan nomor polisi
26    address hasilCari = findElem(L, kenderaanCari);
27
28    if (hasilCari != nullptr) {
29        cout << "Ya" << endl;
30        cout << "Nomor Polisi : " << hasilCari->nopol << endl;
31        cout << "Warna : " << hasilCari->warna << endl;
32        cout << "Thobuat : " << hasilCari->thobuat << endl;
33    } else {
34        cout << "Tidak ada data nomor polisi " << kenderaanCari.nopol << " tidak ditemukan." << endl;
35    }
36    return 0;
37 }
38
```

## Output dari Kode Program:

```
C:\Users\adfa\Documents\C++\Ungraded Modul 8\main.cpp
DATA LIST awal
No Polisi : D004
Warna : Kuning
Thobuat : 98
No Polisi : D003
Warna : Kuning
Thobuat : 99
No Polisi : D001
Warna : Kuning
Thobuat : 99
Masukkan Nomor Polisi yang dicari: D001
Nomor Polisi : D001
Warna : Kuning
Thobuat : 99
```

```

1  doubleList.h X doubleList.cpp X main.cpp X
2  #ifndef DOUBLELIST_H
3  #define DOUBLELIST_H
4
5
6  #include <iostream>
7  #include <string>
8  using namespace std;
9
10 struct InfoType {
11     string empId;
12     string name;
13     int theMax;
14 }
15
16 struct ElemList;
17 typedef ElemList* address;
18
19 struct ElemList {
20     InfoType info;
21     address next;
22     address prev;
23 }
24
25 struct List {
26     address first;
27     address last;
28 }
29
30 void CreateList(List &l);
31 address allocate(InfoType si);
32 void deleteList(address &P);
33 void printList(List l);
34 void insertFirst(List &l, address P);
35 address findElem(List l, InfoType si);
36 void deleteFirst(List &l, address &P);
37 void deleteLast(List &l, address &P);
38 void deleteNode(List &l, address Prev, address &P);
39
40 #endif

```

```

doubleInt x doubleInt y {
1   return "doubleInt.x"
2
3 }
4
5 void CreateIntList t1 {
6     t.First = nullInt;
7     t.Last = nullInt;
8 }
9
10 address t1NodeInfo t1NodeInfo w1 {
11     address P = new T1NodeInfo;
12     P.Next = w1;
13     P.Next = nullInt;
14     P.Previous = nullInt;
15     return P;
16 }
17
18 void DoubleInt.address t2 {
19     doubleInt P;
20     P = nullInt;
21 }
22
23 void printInfoList t1 {
24     address P = t.First;
25     while (P != nullInt) {
26         cout << "P: " << P.info.Next << endl;
27         cout << "Previous" << P.info.Previous << endl;
28         cout << "t2Node" << P.info.t2Node << endl;
29         P = P.Next;
30     }
31 }
32
33 void insertNewList t1, address P {
34     if (t.First == nullInt) {
35         t.First = P;
36         t.Last = P;
37     }
38     else {
39         P.Next = t.First;
40         t.Last.Next = P;
41         t.Last = P;
42     }
43 }
44
45
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```
main.cpp
```

```
double<int> X doubletoX X main.cpp X
1  int<int> "doubleList.h"
2
3  [int main() {
4      List L;
5      CreateList(L);
6
7      int* penderasani = {"Dada", "Bada", 0};
8      int* penderasani = {"Dada", "Bada", 0};
9      int* penderasani = {"Dada", "Bada", 0};
10
11      int* penderasani = {"Dada", "Bada", 0};
12      int* penderasani = {"Dada", "Bada", 0};
13      int* penderasani = {"Dada", "Bada", 0};
14
15      cout << "DATA LIST 1\n";
16      printInfo(L);
17
18      int* penderasani = {"Dada", "Bada", 0};
19      cout << "Gibungas Nama Penderasani yang akan dibuang: ";
20      cin << penderasani;
21
22      int* penderasani = {"Dada", "Bada", 0};
23      if (P == null) {
24          if (P == 1) {
25              delete penderasani;
26          } else if (P == 2) {
27              delete penderasani;
28          } else {
29              delete penderasani;
30          }
31      }
32      cout << "Data dengan nomor polisi " << penderasani << " berhasil dibuang.\n";
33      else {
34          cout << "Data dengan nomor polisi " << penderasani << " tidak ditemukan.\n";
35      }
36
37      cout << "DATA LIST 1\n";
38      printInfo(L);
39
40      return 0;
41
42  }
```

```
C:\Users\an\Documents\Coding\Uniguided Modul\main.cpp C++ Windows (x64) WINDOWS-1252 Line 11, Col 41, Pos 389 Insert Read-Write default
```

# Output dari Kode Program:

```
C:\Users\adfa\Documents\C++\Ungraded Model Ekster\Ungraded Model Ekster>
DATA LIST 1
No Polisi : D004
Warna : kuning
Tahun : 98
No Polisi : D003
Warna : putih
Tahun : 74
No Polisi : D001
Warna : hitam
Tahun : 98

Masukkan Nomor Polisi yang akan dihapus: D003
Data dengan nomor polisi D003 berhasil dihapus.

DATA LIST 1
No Polisi : D004
Warna : kuning
Tahun : 98
No Polisi : D001
Warna : hitam
Tahun : 98
```

