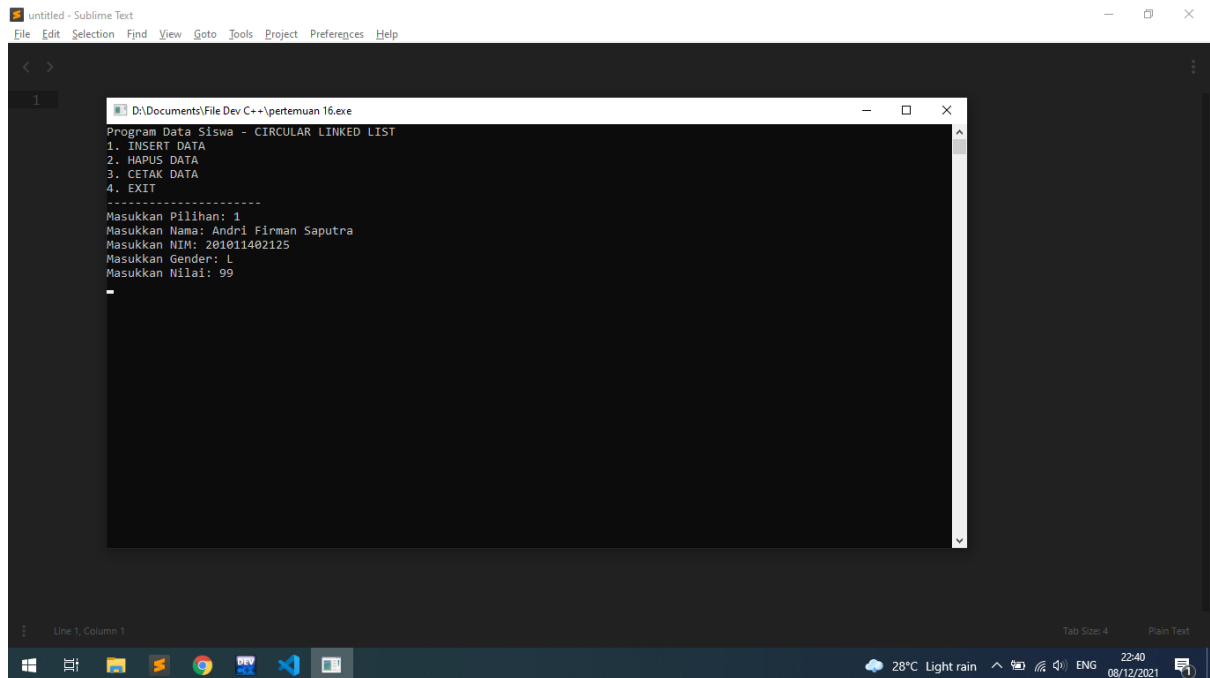


Nama : Andri Firman Saputra

NIM : 201011402125

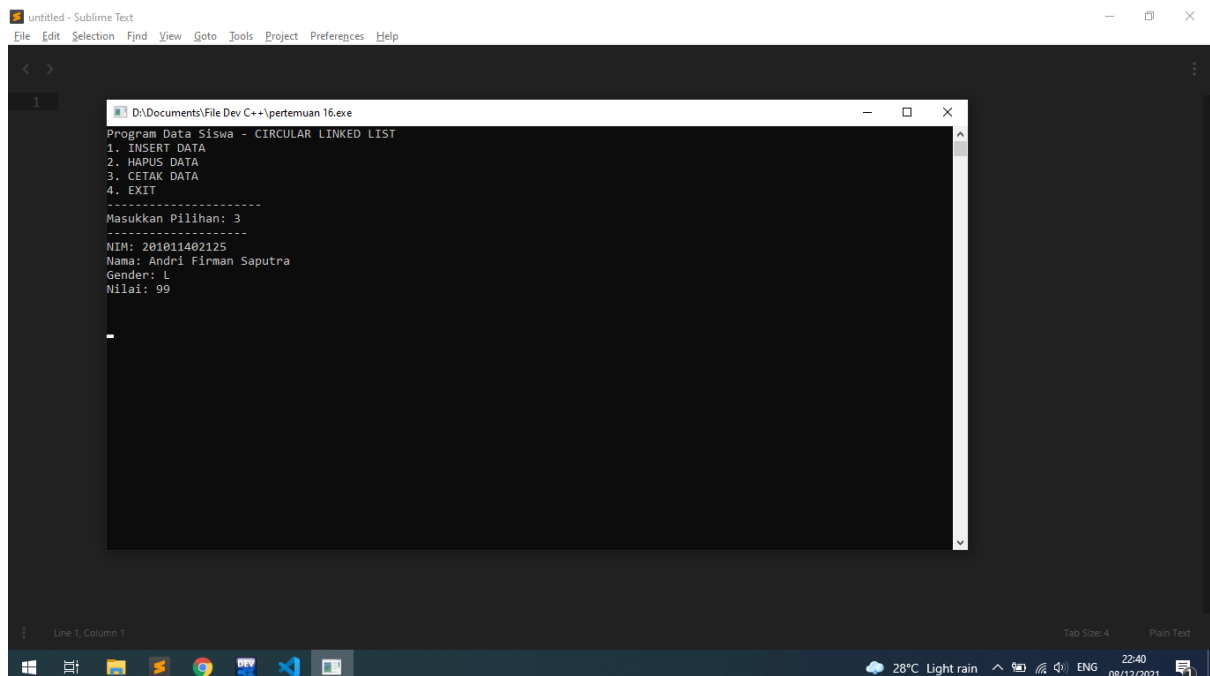
Kelas : 03TPLP016

Tugas : Struktur Data - Pertemuan 16



```
untitled - Sublime Text
File Edit Selection Find View Goto Tools Project Preferences Help

D:\Documents\File Dev C++\pertemuan 16.exe
Program Data Siswa - CIRCULAR LINKED LIST
1. INSERT DATA
2. HAPUS DATA
3. CETAK DATA
4. EXIT
-----
Masukkan Pilihan: 1
Masukkan Nama: Andri Firman Saputra
Masukkan NIM: 201011402125
Masukkan Gender: L
Masukkan Nilai: 99
-
```



```
untitled - Sublime Text
File Edit Selection Find View Goto Tools Project Preferences Help

D:\Documents\File Dev C++\pertemuan 16.exe
Program Data Siswa - CIRCULAR LINKED LIST
1. INSERT DATA
2. HAPUS DATA
3. CETAK DATA
4. EXIT
-----
Masukkan Pilihan: 3
-----
NIM: 201011402125
Nama: Andri Firman Saputra
Gender: L
Nilai: 99
-
```

untitled - Sublime Text

File Edit Selection Find View Goto Tools Project Preferences Help

```
1
D:\Documents\File Dev C++\pertemuan 16.exe
Program Data Siswa - CIRCULAR LINKED LIST
1. INSERT DATA
2. HAPUS DATA
3. CETAK DATA
4. EXIT
-----
Masukkan Pilihan: 1
Masukkan Nama: Andre Farhan Saputra
Masukkan NIM: 201011402123
Masukkan Gender: L
Masukkan Nilai: 80
```

Line 1, Column 1

Tab Size: 4 Plain Text

28°C Light rain 22:40 08/12/2021

untitled - Sublime Text

File Edit Selection Find View Goto Tools Project Preferences Help

```
1
D:\Documents\File Dev C++\pertemuan 16.exe
Program Data Siswa - CIRCULAR LINKED LIST
1. INSERT DATA
2. HAPUS DATA
3. CETAK DATA
4. EXIT
-----
Masukkan Pilihan: 3
-----
NIM: 201011402123
Nama: Andre Farhan Saputra
Gender: L
Nilai: 80
-----
NIM: 201011402125
Nama: Andri Firman Saputra
Gender: L
Nilai: 99
```

Line 1, Column 1

Tab Size: 4 Plain Text

28°C Light rain 22:40 08/12/2021

untitled - Sublime Text

File Edit Selection Find View Goto Tools Project Preferences Help

```
1
D:\Documents\File Dev C++\pertemuan 16.exe
Program Data Siswa - CIRCULAR LINKED LIST
1. INSERT DATA
2. HAPUS DATA
3. CETAK DATA
4. EXIT
-----
Masukkan Pilihan: 2
Masukkan NIM: 201011402125
Data dengan NIM 201011402125 berhasil dihapus
```

Line 1, Column 1

Tab Size: 4 Plain Text

28°C Light rain 22:40 08/12/2021

untitled - Sublime Text

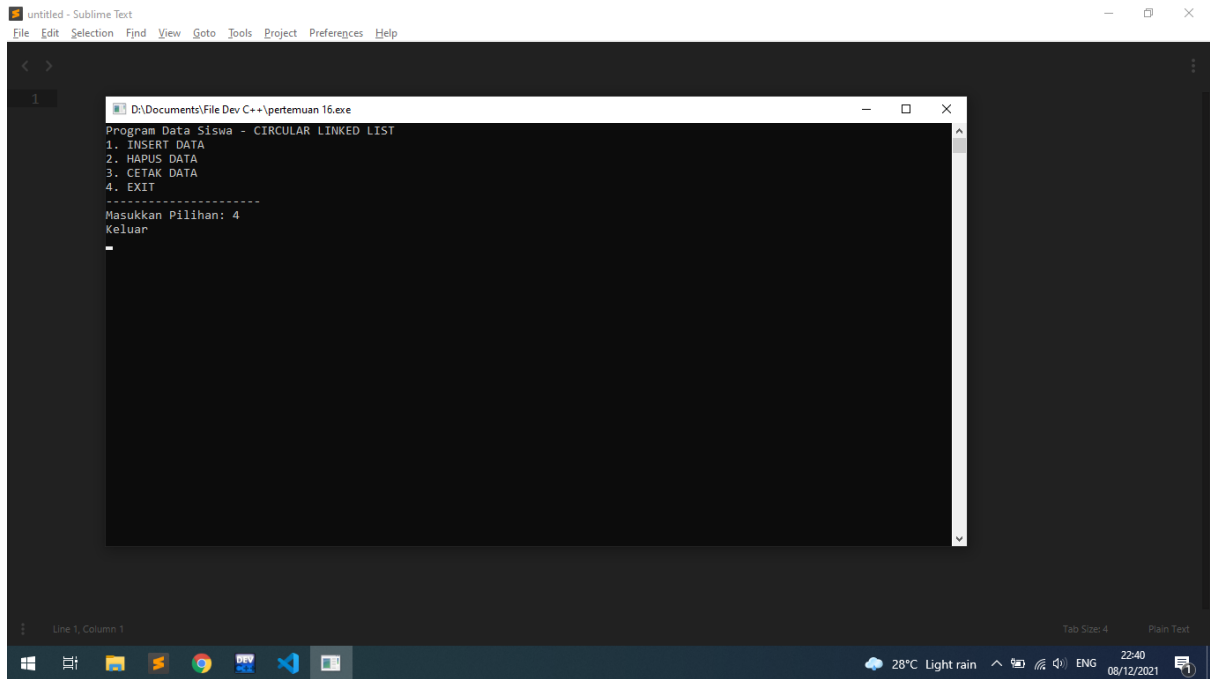
File Edit Selection Find View Goto Tools Project Preferences Help

```
1
D:\Documents\File Dev C++\pertemuan 16.exe
Program Data Siswa - CIRCULAR LINKED LIST
1. INSERT DATA
2. HAPUS DATA
3. CETAK DATA
4. EXIT
-----
Masukkan Pilihan: 3
NIM: 201011402123
Nama: Andre Farhan Saputra
Gender: L
Nilai: 80
```

Line 1, Column 1

Tab Size: 4 Plain Text

28°C Light rain 22:40 08/12/2021



D:\Documents\File Dev C++\pertemuan 16.cpp - Dev-C++ 5.11

File Edit Search View Project Execute Tools AStyle Window Help

(globals)

Project Classes pertemuan 16.cpp

```
1 #include <iostream>
2 #include <stdlib.h>
3 #include <conio.h>
4
5 using namespace std;
6
7 struct Node
8 {
9     string nama;
10    long long int nim;
11    char gender;
12    int nilai;
13    struct Node *next;
14 };
15
16 struct Node *insertInEmpty(struct Node *last, string nama, long long int nim, char gender, int nilai)
17 {
18     if (last != NULL)
19         return last;
20
21     struct Node *temp = new Node;
22
23     temp->nama = nama;
24     temp->nim = nim;
25     temp->gender = gender;
26     temp->nilai = nilai;
27     last = temp;
28
29     last->next = last;
30
31     return last;
32 }
```

Compiler Resources Compile Log Debug Find Results

28°C Light rain 22:41 08/12/2021

D:\Documents\File Dev C++\pertemuan 16.cpp - Dev-C++ 5.11

File Edit Search View Project Execute Tools AStyle Window Help

(globals)

Project Classes pertemuan 16.cpp

```
32 }
33
34 struct Node *insertAtBegin(struct Node *last, string nama, long long int nim, char gender, int nilai)
35 {
36     if (last == NULL)
37         return insertInEmpty(last, nama, nim, gender, nilai);
38
39     struct Node *temp = new Node;
40
41     temp->nama = nama;
42     temp->nim = nim;
43     temp->gender = gender;
44     temp->nilai = nilai;
45     temp->next = last->next;
46     last->next = temp;
47
48     return last;
49 }
50
51 struct Node *insertAtEnd(struct Node *last, string nama, long long int nim, char gender, int nilai)
52 {
53     if (last == NULL)
54         return insertInEmpty(last, nama, nim, gender, nilai);
55
56     struct Node *temp = new Node;
57
58     temp->nama = nama;
59     temp->nim = nim;
60     temp->gender = gender;
61     temp->nilai = nilai;
62     temp->next = last->next;
63     last->next = temp;
64 }
```

Compiler Resources Compile Log Debug Find Results

28°C Light rain 22:41 08/12/2021

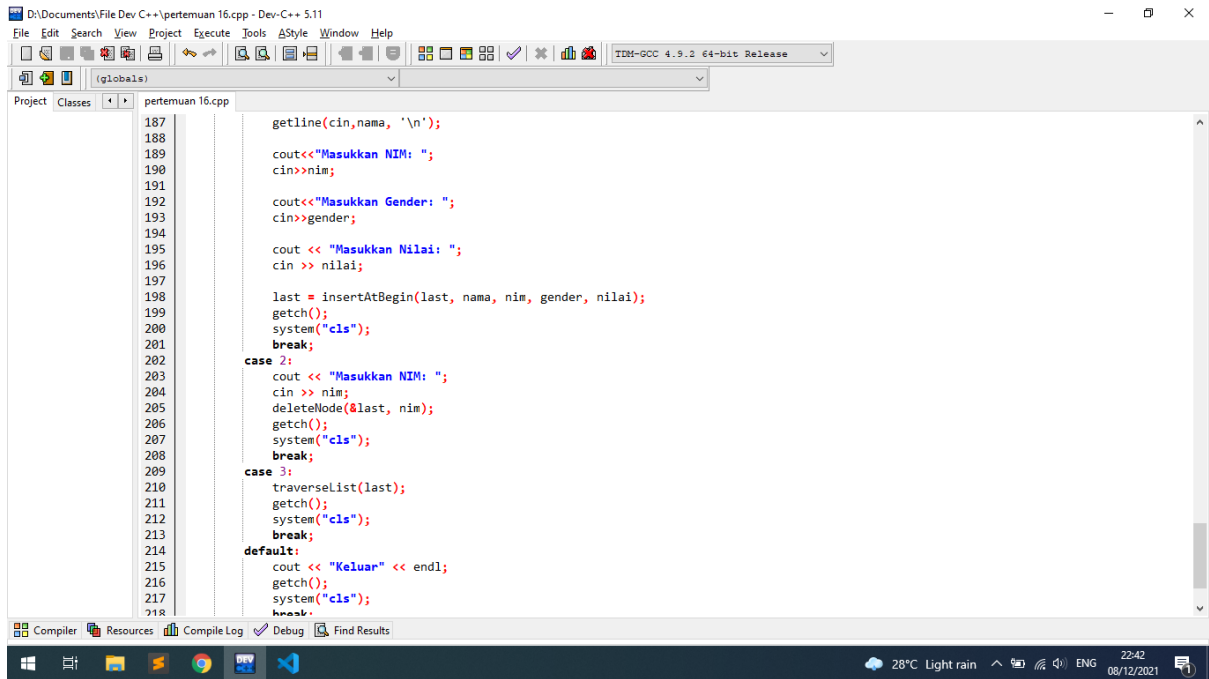
```
D:\Documents\File Dev C++\pertemuan 16.cpp - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
Project Classes pertemuan 16.cpp
63
64     return last;
65 }
66
67 struct Node *insertAfter(struct Node *last, string nama, long long int nim, char gender, int nilai, int key)
68 {
69     if (last == NULL)
70         return NULL;
71
72     struct Node *temp, *p;
73     p = last->next;
74     do
75     {
76         if (p->nim == key)
77         {
78             temp = new Node;
79             temp->nama = nama;
80             temp->nim = nim;
81             temp->gender = gender;
82             temp->nilai = nilai;
83             temp->next = p->next;
84             p->next = temp;
85
86             if (p == last)
87                 last = temp;
88             return last;
89         }
90         p = p->next;
91     } while (p != last->next);
92
93     cout << "Data NIM " << nim << " tidak ada" << endl;
94     return last;
95 }
Compiler Resources Compile Log Debug Find Results
28°C Light rain 22:41 08/12/2021
```

```
D:\Documents\File Dev C++\pertemuan 16.cpp - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
Project Classes pertemuan 16.cpp
94     return last;
95 }
96 void traverseList(struct Node *last)
97 {
98     struct Node *p;
99
100     if (last == NULL)
101     {
102         cout << "Data Kosong" << endl;
103         return;
104     }
105     p = last->next;
106     do
107     {
108         cout << "-----" << endl;
109         cout << "NIM: " << p->nim << endl;
110         cout << "Nama: " << p->nama << endl;
111         cout << "Gender: " << p->gender << endl;
112         cout << "Nilai: " << p->nilai << endl;
113
114         p = p->next;
115     } while (p != last->next);
116     cout << "\n\n";
117 }
118
119 void deleteNode(Node **head, long long int key)
120 {
121     if (*head == NULL)
122         return;
123
124     if ((*head)->nim == key && (*head)->next == *head)
125     {
126         *head = NULL;
127         return;
128     }
129     struct Node *p, *prev;
130     p = *head;
131     prev = NULL;
132     while (p != last->next)
133     {
134         if (p->nim == key)
135         {
136             if (prev == NULL)
137                 *head = p->next;
138             else
139                 prev->next = p->next;
140             delete p;
141             p = p->next;
142         }
143         else
144             prev = p;
145         p = p->next;
146     }
147 }
148
149 int main()
150 {
151     struct Node *head = NULL;
152     struct Node *last = NULL;
153
154     int n;
155     cin >> n;
156
157     for (int i = 0; i < n; i++)
158     {
159         string nama;
160         long long int nim;
161         char gender;
162         int nilai;
163
164         cin >> nama >> nim >> gender >> nilai;
165
166         last = insertAfter(last, nama, nim, gender, nilai, last->nim);
167     }
168
169     traverseList(last);
170
171     long long int key;
172     cin >> key;
173
174     deleteNode(&head, key);
175
176     traverseList(last);
177
178     return 0;
179 }
Compiler Resources Compile Log Debug Find Results
28°C Light rain 22:41 08/12/2021
```

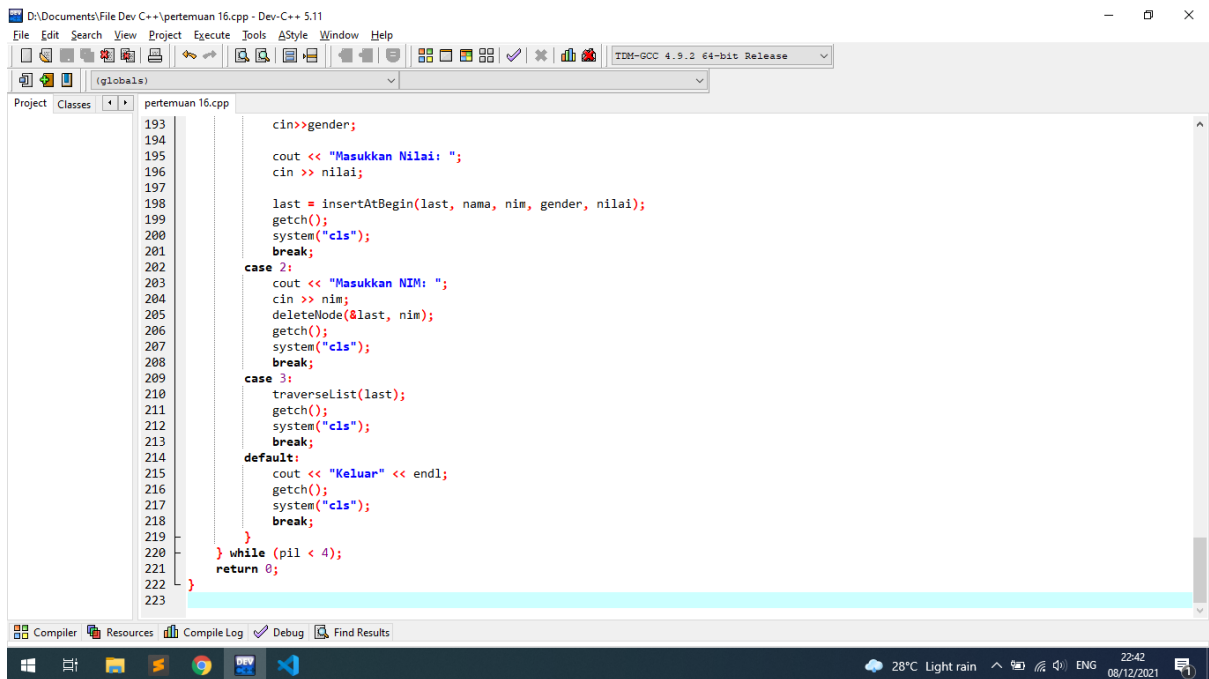
```
D:\Documents\File Dev C++\pertemuan 16.cpp - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
pertemuan 16.cpp
125 | if ((*head)->nim == key && (*head)->next == *head)
126 | {
127 |     free(*head);
128 |     *head = NULL;
129 | }
130 | Node *last = *head, *d;
131 |
132 | if ((*head)->nim == key)
133 | {
134 |     while (last->next != *head)
135 |         last = last->next;
136 |
137 |     last->next = (*head)->next;
138 |     free(*head);
139 |     *head = last->next;
140 | }
141 |
142 | while (last->next != *head && last->next->nim != key)
143 | {
144 |     last = last->next;
145 | }
146 | if (last->next->nim == key)
147 | {
148 |     d = last->next;
149 |     last->next = d->next;
150 |     cout << "Data dengan NIM " << key << " berhasil dihapus" << endl;
151 |     free(d);
152 |     cout << endl;
153 |     cout << "Daftar Mahasiswa setelah menghapus NIM " << key << endl;
154 |     traverseList(last);
155 | }
156 | }
Compiler Resources Compile Log Debug Find Results
28°C Light rain 22:41 08/12/2021
```

```
D:\Documents\File Dev C++\pertemuan 16.cpp - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
pertemuan 16.cpp
156 | else
157 |     cout << "Data dengan NIM " << key << " berhasil dihapus" << endl;
158 | }
159 |
160 | int main()
161 | {
162 |     int nilai, pil;
163 |     string nama;
164 |     long long int nim;
165 |     char gender;
166 |
167 |     struct Node *last = NULL;
168 |
169 |     deleteNode(&last, 10);
170 |     do
171 |     {
172 |         cout << "Program Data Siswa - CIRCULAR LINKED LIST" << endl;
173 |         cout << "1. INSERT DATA" << endl;
174 |         cout << "2. HAPUS DATA" << endl;
175 |         cout << "3. CETAK DATA" << endl;
176 |         cout << "4. EXIT" << endl;
177 |         cout << "-----" << endl;
178 |
179 |         cout << "Masukkan Pilihan: ";
180 |         cin >> pil;
181 |
182 |         switch (pil)
183 |         {
184 |             case 1:
185 |                 cout << "Masukkan Nama: ";
186 |                 cin.ignore();
187 |                 getline(cin, nama, '\n');

```



```
D:\Documents\File Dev C++\pertemuan 16.cpp - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
pertemuan 16.cpp
187     getline(cin,nama, '\n');
188
189     cout<<"Masukkan NIM: ";
190     cin>>nim;
191
192     cout<<"Masukkan Gender: ";
193     cin>>gender;
194
195     cout << "Masukkan Nilai: ";
196     cin >> nilai;
197
198     last = insertAtBegin(last, nama, nim, gender, nilai);
199     getch();
200     system("cls");
201     break;
202
203     case 2:
204     cout << "Masukkan NIM: ";
205     cin >> nim;
206     deleteNode(&last, nim);
207     getch();
208     system("cls");
209     break;
210
211     case 3:
212     traverseList(last);
213     getch();
214     system("cls");
215     break;
216
217     default:
218     cout << "Keluar" << endl;
219     getch();
220     system("cls");
221     break;
222
223 }
```



```
D:\Documents\File Dev C++\pertemuan 16.cpp - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
pertemuan 16.cpp
193     cin>>gender;
194
195     cout << "Masukkan Nilai: ";
196     cin >> nilai;
197
198     last = insertAtBegin(last, nama, nim, gender, nilai);
199     getch();
200     system("cls");
201     break;
202
203     case 2:
204     cout << "Masukkan NIM: ";
205     cin >> nim;
206     deleteNode(&last, nim);
207     getch();
208     system("cls");
209     break;
210
211     case 3:
212     traverseList(last);
213     getch();
214     system("cls");
215     break;
216
217     default:
218     cout << "Keluar" << endl;
219     getch();
220     system("cls");
221     break;
222
223 }
224
225 } while (pil < 4);
226 return 0;
227 }
```