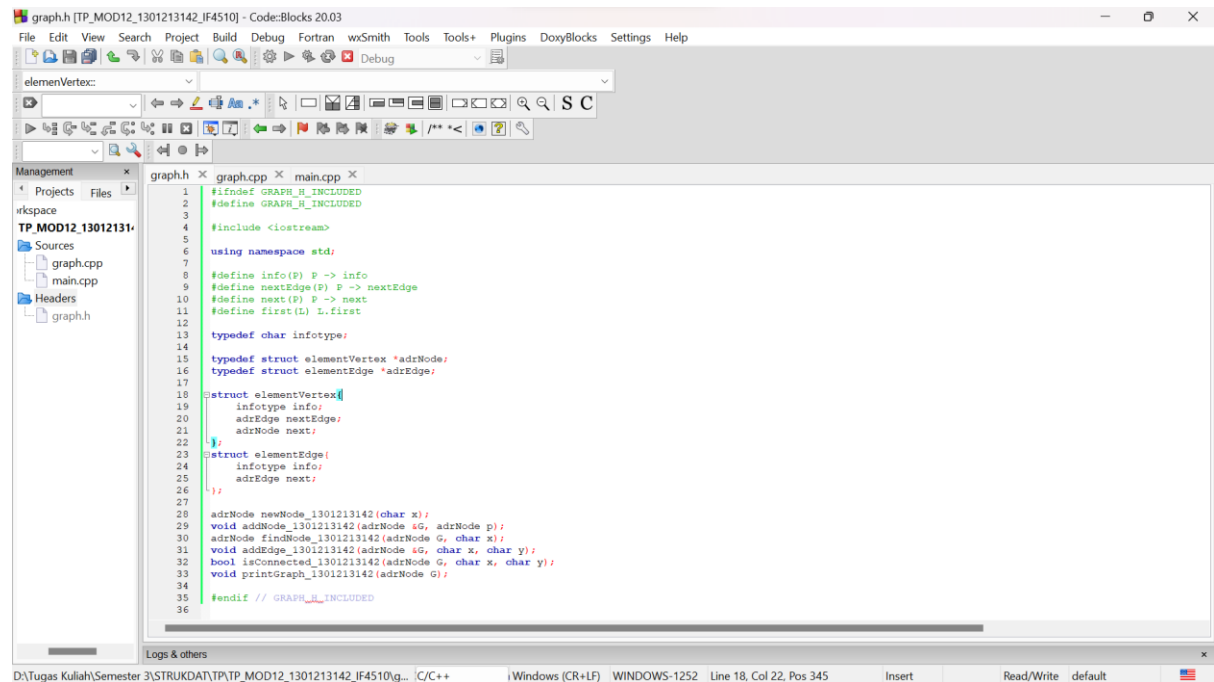


Nama: Candra Kus Khoiri Wicaksono

Kelas : IF4510

NIM : 1301213142

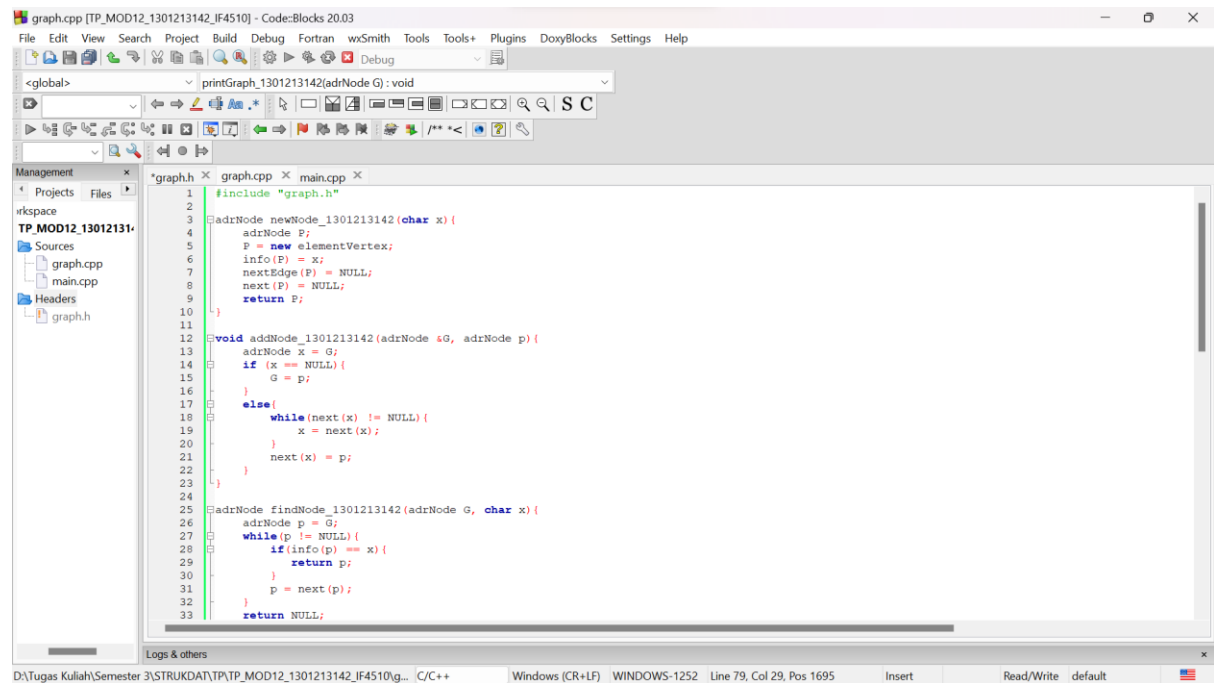
Graph.h



The screenshot shows the Code::Blocks IDE with the Graph.h header file open. The file contains preprocessor directives for conditional compilation, standard library includes, namespace declarations, and typedefs for graph nodes and edges. It also defines macros for node and edge information, and declares functions for node management and graph printing.

```
graph.h [TP_MOD12_1301213142_IF4510] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
elemenVertex:
graph.h
graph.cpp
main.cpp
1 #ifndef GRAPH_H_INCLUDED
2 #define GRAPH_H_INCLUDED
3
4 #include <iostream>
5
6 using namespace std;
7
8 #define info(P) P -> info
9 #define nextEdge(P) P -> nextEdge
10 #define next(P) P -> next
11 #define first(L) L.first
12
13 typedef char infotype;
14
15 typedef struct elementVertex *adrNode;
16 typedef struct elementEdge *adrEdge;
17
18 struct elementVertex{
19     infotype info;
20     adrEdge nextEdge;
21     adrNode next;
22 };
23 struct elementEdge{
24     infotype info;
25     adrEdge next;
26 };
27
28 adrNode newNode_1301213142(char x);
29 void addNode_1301213142(adrNode sG, adrNode p);
30 adrNode findNode_1301213142(adrNode G, char x);
31 void addEdge_1301213142(adrNode sG, char x, char y);
32 bool isConnected_1301213142(adrNode G, char x, char y);
33 void printGraph_1301213142(adrNode G);
34
35 #endif // GRAPH_H_INCLUDED
36
Logs & others
D:\Tugas Kuliah\Semester 3\STRUKDAT\TP\TP_MOD12_1301213142_IF4510\g... C/C++ Windows (CR+LF) WINDOWS-1252 Line 18, Col 22, Pos 345 Insert Read/Write default
```

Graph.cpp



The screenshot shows the Code::Blocks IDE with the Graph.cpp source file open. The file implements the functions declared in Graph.h, including node creation, node addition, node finding, edge addition, and graph printing. It uses the typedefs and macros defined in the header file.

```
graph.cpp [TP_MOD12_1301213142_IF4510] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<global>
graph.h
graph.cpp
main.cpp
1 #include "graph.h"
2
3 adrNode newNode_1301213142(char x){
4     adrNode P;
5     P = new elementVertex;
6     info(P) = x;
7     nextEdge(P) = NULL;
8     next(P) = NULL;
9     return P;
10 }
11
12 void addNode_1301213142(adrNode sG, adrNode p){
13     adrNode x = G;
14     if (x == NULL){
15         G = p;
16     }
17     else{
18         while(next(x) != NULL){
19             x = next(x);
20         }
21         next(x) = p;
22     }
23 }
24
25 adrNode findNode_1301213142(adrNode G, char x){
26     adrNode p = G;
27     while(p != NULL){
28         if(info(p) == x){
29             return p;
30         }
31         p = next(p);
32     }
33     return NULL;
34 }
35
Logs & others
D:\Tugas Kuliah\Semester 3\STRUKDAT\TP\TP_MOD12_1301213142_IF4510\g... C/C++ Windows (CR+LF) WINDOWS-1252 Line 79, Col 29, Pos 1695 Insert Read/Write default
```

Nama: Candra Kus Khoiri Wicaksono

Kelas : IF4510

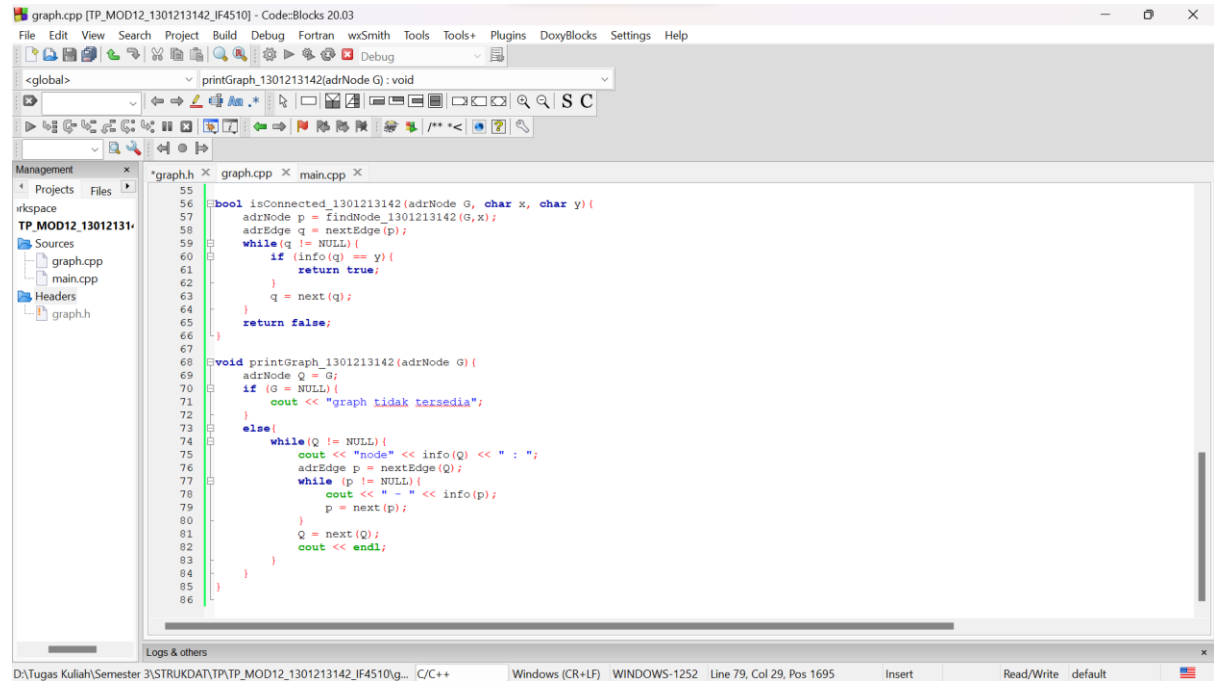
NIM : 1301213142

```
graph.cpp [TP_MOD12_1301213142_IF4510] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wsSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<global> printGraph_1301213142(adNode G): void
graph.h graph.cpp main.cpp
31 p = next(p);
32 }
33 return NULL;
34 }
35 }
36
37 void addEdge_1301213142(adNode G, char x, char y){
38     adEdge q;
39     adNode p = findNode_1301213142(G,x);
40     if (p == NULL){
41         p = newNode_1301213142(x);
42         addNode_1301213142(G,p);
43         q = new elementEdge;
44         info(q) = y;
45         next(q) = NULL;
46         nextEdge(p) = q;
47     }
48     else{
49         q = new elementEdge;
50         info(q) = y;
51         next(q) = nextEdge(p);
52         nextEdge(p) = q;
53     }
54 }
55
56 bool isConnected_1301213142(adNode G, char x, char y){
57     adNode p = findNode_1301213142(G,x);
58     adEdge q = nextEdge(p);
59     while(q != NULL){
60         if (info(q) == y){
61             return true;
62         }
63         q = next(q);
64     }
65     return false;
66 }
```

Nama: Candra Kus Khoiri Wicaksono

Kelas : IF4510

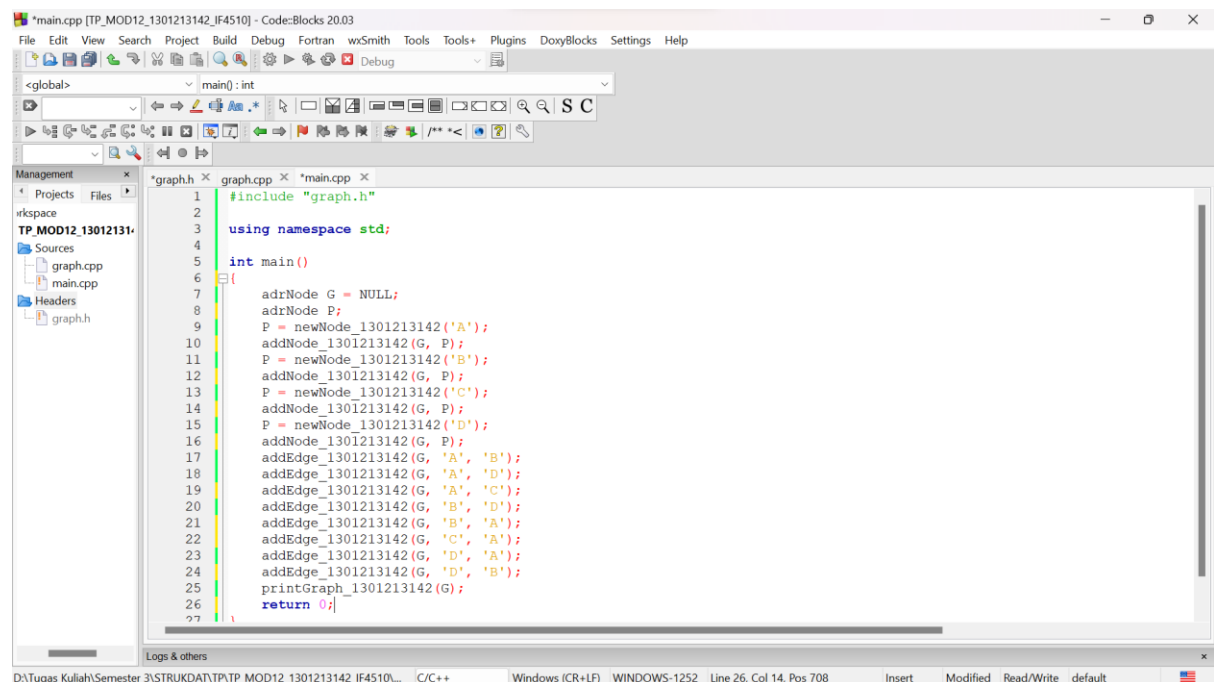
NIM : 1301213142



The screenshot shows the Code::Blocks IDE with the file graph.cpp open. The code defines a graph structure and a function to print it. The graph has nodes and edges, and the print function traverses the graph to display its structure.

```
graph.cpp [TP_MOD12_1301213142_IF4510] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wsSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<global> printGraph_1301213142(addrNode G): void
graph.h graph.cpp main.cpp
55
56 bool isConnected_1301213142(addrNode G, char x, char y) {
57     adrNode p = findNode_1301213142(G, x);
58     adrEdge q = nextEdge(p);
59     while(q != NULL) {
60         if (info(q) == y) {
61             return true;
62         }
63         q = next(q);
64     }
65     return false;
66 }
67
68 void printGraph_1301213142(addrNode G) {
69     adrNode Q = G;
70     if (G == NULL) {
71         cout << "graph tidak tersedia";
72     }
73     else {
74         while(Q != NULL) {
75             cout << "node" << info(Q) << " : ";
76             adrEdge p = nextEdge(Q);
77             while (p != NULL) {
78                 cout << " - " << info(p);
79                 p = next(p);
80             }
81             Q = next(Q);
82             cout << endl;
83         }
84     }
85 }
86
Logs & others
D:\Tugas Kuliah\Semester 3\STRUKDAT\TP\TP_MOD12_1301213142_IF4510\g... C/C++ Windows (CR+LF) WINDOWS-1252 Line 79, Col 29, Pos 1695 Insert Read/Write default
```

Main.cpp



The screenshot shows the Code::Blocks IDE with the file main.cpp open. The code includes the graph.h header and uses the std namespace. The main function initializes a graph with four nodes (A, B, C, D) and adds edges between them. Finally, it calls the printGraph function to display the graph.

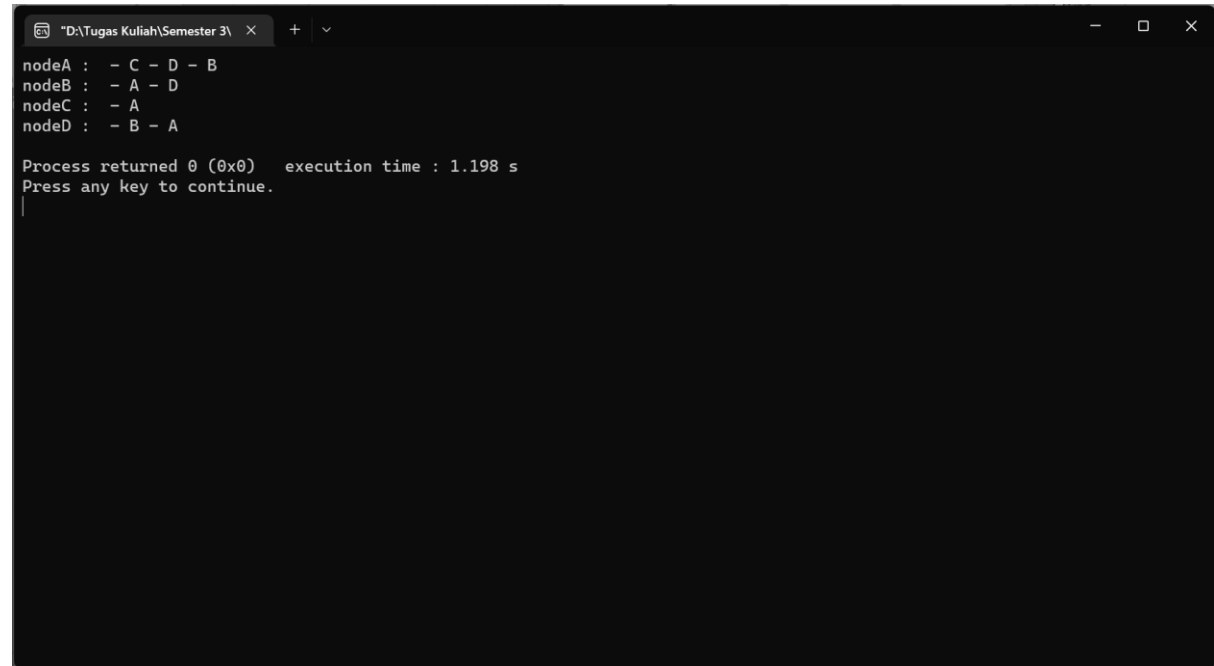
```
*main.cpp [TP_MOD12_1301213142_IF4510] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wsSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<global> main(): int
graph.h graph.cpp *main.cpp
1 #include "graph.h"
2
3 using namespace std;
4
5 int main()
6 {
7     adrNode G = NULL;
8     adrNode P;
9     P = newNode_1301213142('A');
10    addNode_1301213142(G, P);
11    P = newNode_1301213142('B');
12    addNode_1301213142(G, P);
13    P = newNode_1301213142('C');
14    addNode_1301213142(G, P);
15    P = newNode_1301213142('D');
16    addNode_1301213142(G, P);
17    addEdge_1301213142(G, 'A', 'B');
18    addEdge_1301213142(G, 'A', 'D');
19    addEdge_1301213142(G, 'A', 'C');
20    addEdge_1301213142(G, 'B', 'D');
21    addEdge_1301213142(G, 'B', 'A');
22    addEdge_1301213142(G, 'C', 'A');
23    addEdge_1301213142(G, 'D', 'A');
24    addEdge_1301213142(G, 'D', 'B');
25    printGraph_1301213142(G);
26    return 0;
27
Logs & others
D:\Tugas Kuliah\Semester 3\STRUKDAT\TP\TP_MOD12_1301213142_IF4510\... C/C++ Windows (CR+LF) WINDOWS-1252 Line 26, Col 14, Pos 708 Insert Modified Read/Write default
```

Ss

Nama: Candra Kus Khoiri Wicaksono

Kelas : IF4510

NIM : 1301213142



```
"D:\Tugas Kuliah\Semester 3\  x + | v
nodeA : - C - D - B
nodeB : - A - D
nodeC : - A
nodeD : - B - A

Process returned 0 (0x0)   execution time : 1.198 s
Press any key to continue.
```