

LAPORAN UAS STRUKTUR DATA  
ADJACENCY LIST UNDIRECTED GRAPH



Disusun oleh :

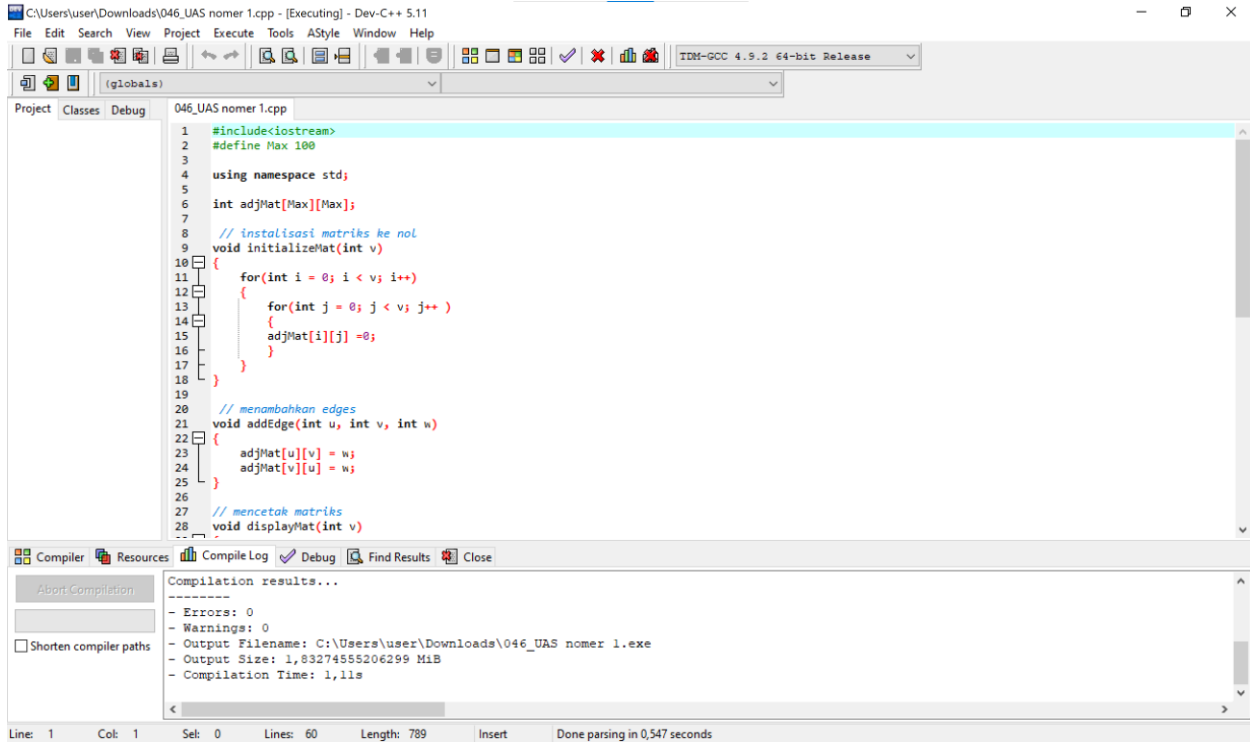
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UNIVERSITAS NEGERI SURABAYA  
MANAJEMEN INFORMATIKA

2021

# Soal No.1

## -Kodingan

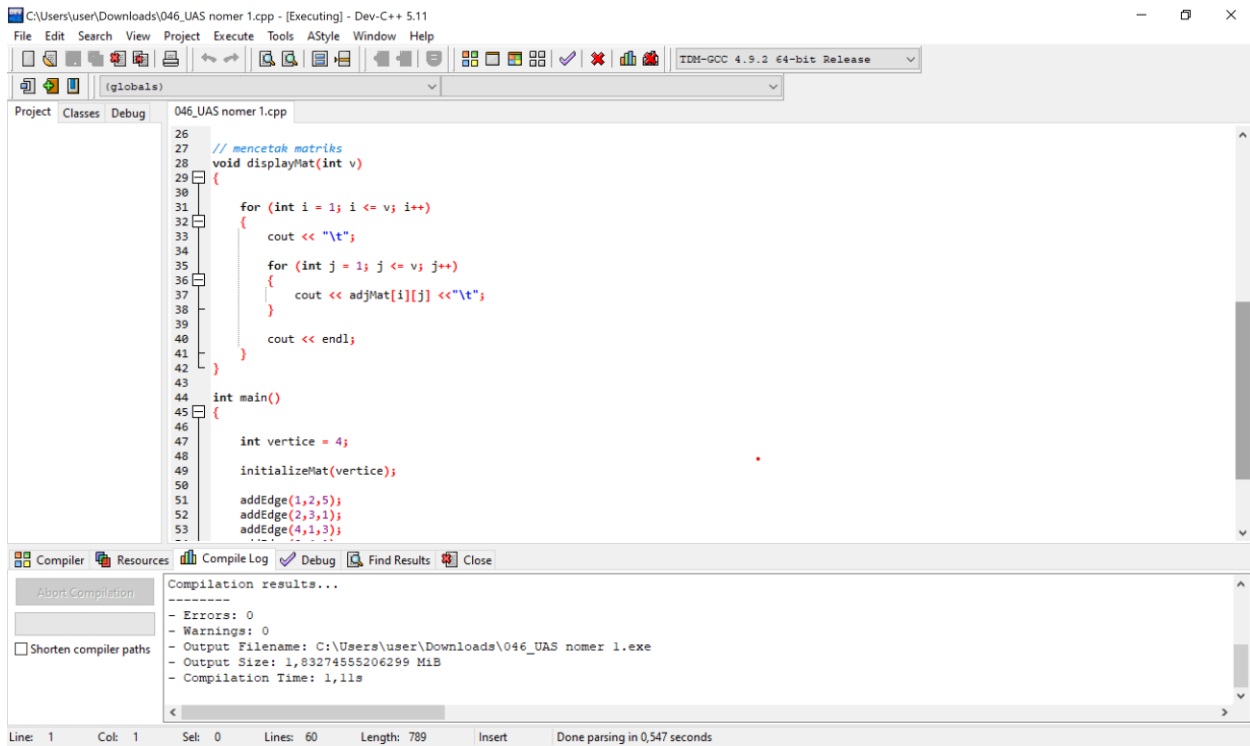


```
1 #include<iostream>
2 #define Max 100
3
4 using namespace std;
5
6 int adjMat[Max][Max];
7
8 // instalisasi matriks ke nol
9 void initializeMat(int v)
10 {
11     for(int i = 0; i < v; i++)
12     {
13         for(int j = 0; j < v; j++)
14         {
15             adjMat[i][j] = 0;
16         }
17     }
18 }
19
20 // menambahkan edges
21 void addEdge(int u, int v, int w)
22 {
23     adjMat[u][v] = w;
24     adjMat[v][u] = w;
25 }
26
27 // mencetak matriks
28 void displayMat(int v)
```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\user\Downloads\046\_UAS nomer 1.exe
- Output Size: 1,83274555206299 MiB
- Compilation Time: 1,11s

Line: 1 Col: 1 Sel: 0 Lines: 60 Length: 789 Insert Done parsing in 0,547 seconds



```
26
27 // mencetak matriks
28 void displayMat(int v)
29 {
30     for (int i = 1; i <= v; i++)
31     {
32         cout << "\t";
33
34         for (int j = 1; j <= v; j++)
35         {
36             cout << adjMat[i][j] << "\t";
37         }
38
39         cout << endl;
40     }
41 }
42
43
44 int main()
45 {
46     int vertice = 4;
47
48     initializeMat(vertice);
49
50     addEdge(1,2,5);
51     addEdge(2,3,1);
52     addEdge(4,1,3);
53     ...
54 }
```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\user\Downloads\046\_UAS nomer 1.exe
- Output Size: 1,83274555206299 MiB
- Compilation Time: 1,11s

Line: 1 Col: 1 Sel: 0 Lines: 60 Length: 789 Insert Done parsing in 0,547 seconds

C:\Users\user\Downloads\046\_UAS nomer 1.cpp - [Executing] - Dev-C++ 5.11

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(globals)

Project Classes Debug 046\_UAS nomer 1.cpp

```
33     cout << "\t";
34
35     for (int j = 1; j <= v; j++)
36     {
37         cout << adjMat[i][j] << "\t";
38     }
39
40     cout << endl;
41 }
42
43
44 int main()
45 {
46
47     int vertice = 4;
48
49     initializeMat(vertice);
50
51     addEdge(1,2,5);
52     addEdge(2,3,1);
53     addEdge(4,1,3);
54     addEdge(2,4,1);
55     addEdge(3,1,1);
56
57     displayMat(vertice);
58
59     return 0;
60 }
```

Compiler Resources Compile Log Debug Find Results Close

Abort Compilation

Shorten compiler paths

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\user\Downloads\046\_UAS nomer 1.exe
- Output Size: 1,83274555206299 MiB
- Compilation Time: 1,11s

Line: 1 Col: 1 Sel: 0 Lines: 60 Length: 789 Insert Done parsing in 0,547 seconds

## -output

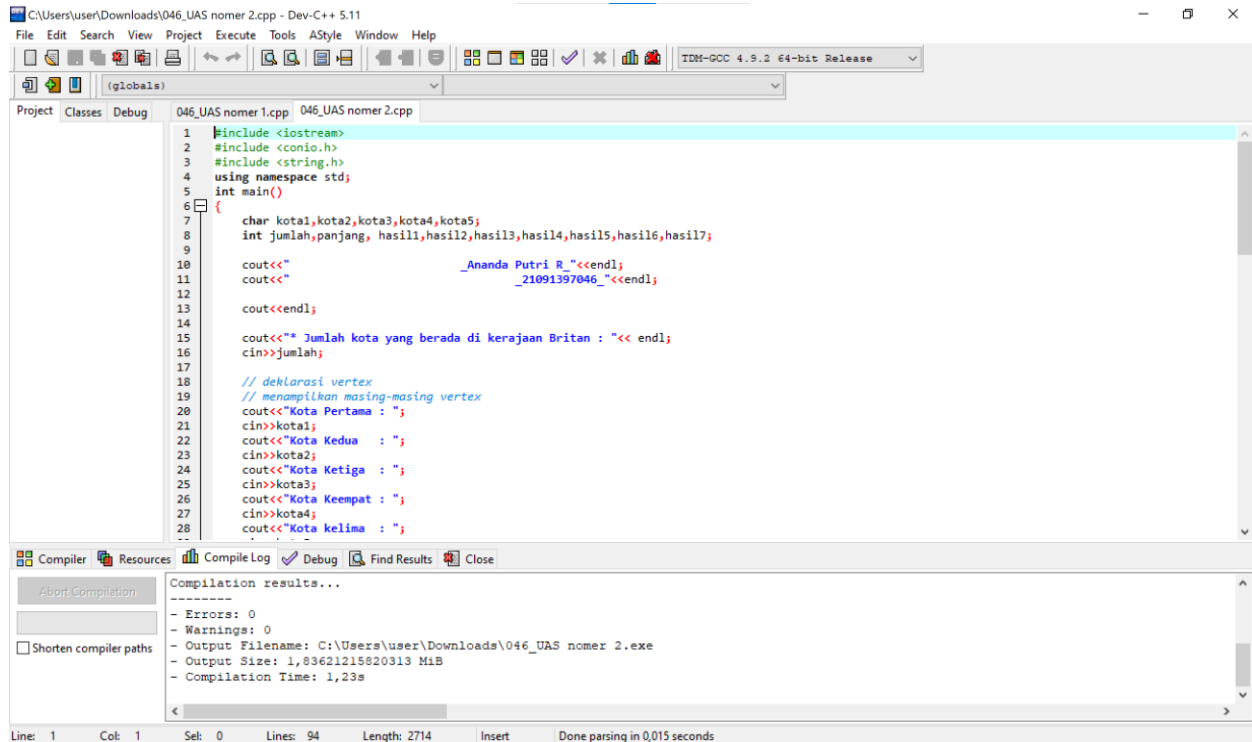
C:\Users\user\Downloads\046\_UAS nomer 1.exe

```
0      5      1      3
5      0      1      1
1      1      0      0
3      1      0      0

-----
Process exited after 10.25 seconds with return value 0
Press any key to continue . . .
```

## Soal No.2

### -kodingan

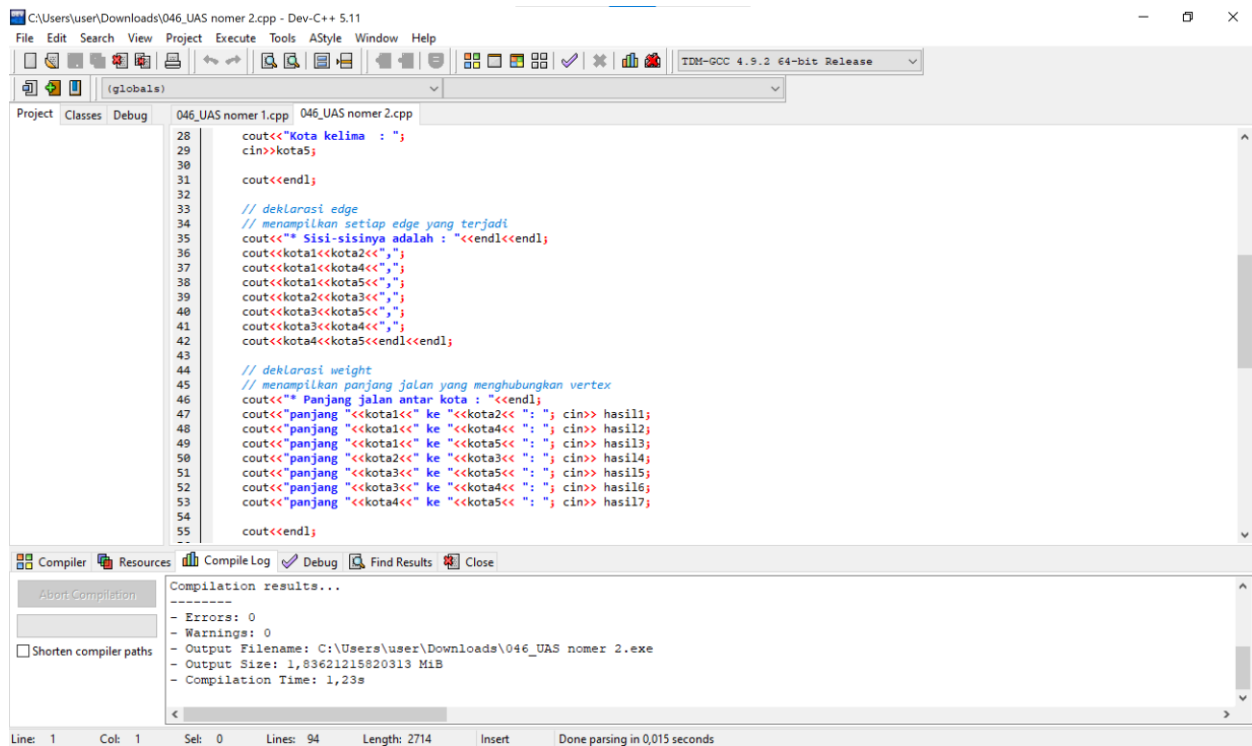


```
1 #include <iostream>
2 #include <conio.h>
3 #include <string.h>
4 using namespace std;
5 int main()
6 {
7     char kota1,kota2,kota3,kota4,kota5;
8     int jumlah,panjang, hasil1,hasil2,hasil3,hasil4,hasil5,hasil6,hasil7;
9
10    cout<<"          _Ananda Putri R "<<endl;
11    cout<<"          _21091397046_"<<endl;
12
13    cout<<endl;
14
15    cout<<"* Jumlah kota yang berada di kerajaan Britan : "<< endl;
16    cin>>jumlah;
17
18    // deklarasi vertex
19    // menampilkan masing-masing vertex
20    cout<<"Kota Pertama : ";
21    cin>>kota1;
22    cout<<"Kota Kedua  : ";
23    cin>>kota2;
24    cout<<"Kota Ketiga : ";
25    cin>>kota3;
26    cout<<"Kota Keempat : ";
27    cin>>kota4;
28    cout<<"Kota kelima  : ";
```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\user\Downloads\046\_UAS nomer 2.exe
- Output Size: 1,83621215820313 MiB
- Compilation Time: 1,23s

Line: 1 Col: 1 Sel: 0 Lines: 94 Length: 2714 Insert Done parsing in 0,015 seconds



```
28    cout<<"Kota kelima  : ";
29    cin>>kota5;
30
31    cout<<endl;
32
33    // deklarasi edge
34    // menampilkan setiap edge yang terjadi
35    cout<<"* Sisi-sisinya adalah : "<<endl<<endl;
36    cout<<kota1<<kota2<<" ";
37    cout<<kota1<<kota4<<" ";
38    cout<<kota1<<kota5<<" ";
39    cout<<kota2<<kota3<<" ";
40    cout<<kota3<<kota5<<" ";
41    cout<<kota3<<kota4<<" ";
42    cout<<kota4<<kota5<<endl<<endl;
43
44    // deklarasi weight
45    // menampilkan panjang jalan yang menghubungkan vertex
46    cout<<"* Panjang jalan antar kota : "<<endl;
47    cout<<"panjang "<<kota1<<" ke "<<kota2<<" : "; cin>> hasil1;
48    cout<<"panjang "<<kota1<<" ke "<<kota4<<" : "; cin>> hasil2;
49    cout<<"panjang "<<kota1<<" ke "<<kota5<<" : "; cin>> hasil3;
50    cout<<"panjang "<<kota2<<" ke "<<kota3<<" : "; cin>> hasil4;
51    cout<<"panjang "<<kota3<<" ke "<<kota5<<" : "; cin>> hasil5;
52    cout<<"panjang "<<kota3<<" ke "<<kota4<<" : "; cin>> hasil6;
53    cout<<"panjang "<<kota4<<" ke "<<kota5<<" : "; cin>> hasil7;
54
55    cout<<endl;
```

Compilation results...

- Errors: 0
- Warnings: 0
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- Output Size: 1,83621215820313 MiB
- Compilation Time: 1,23s

Line: 1 Col: 1 Sel: 0 Lines: 94 Length: 2714 Insert Done parsing in 0,015 seconds

C:\Users\user\Downloads\046\_UAS nomer 2.cpp - Dev-C++ 5.11

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(globals)

Project Classes Debug 046\_UAS nomer 1.cpp 046\_UAS nomer 2.cpp

```
56
57
58 cout<<"* seluruh jalan yang ada dalam kerajaan britan dan panjang jalannya : "<< endl;
59 cout<<("kota1<<","kota2<<","hasil1<<")<<endl;
60 cout<<("kota1<<","kota4<<","hasil2<<")<<endl;
61 cout<<("kota1<<","kota5<<","hasil3<<")<<endl;
62 cout<<("kota2<<","kota3<<","hasil4<<")<<endl;
63 cout<<("kota3<<","kota5<<","hasil5<<")<<endl;
64 cout<<("kota3<<","kota4<<","hasil6<<")<<endl;
65 cout<<("kota4<<","kota5<<","hasil7<<")<<endl;
66
67 cout<<"* kota tempat pedagang sekarang berada : "<<endl<<endl;
68 cout<<kota1;
69
70
71 cout<<endl<<endl;
72
73 cout<<"* kota yang diserang naga : "<<endl<<endl;
74 cout<<kota3;
75
76 cout<<endl<<endl;
77
78 cout<<"* kota yang memiliki kastil : "<<endl<<endl;
79 cout<<kota5;
80
81 cout<<endl<<endl;
82
83 cout<<"* jalur yang paling cepat ditempuh : "<<endl<<endl;
```

Compiler Resources Compile Log Debug Find Results Close

Compilation results...

- Errors: 0
- Warnings: 0
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- Output Size: 1,83621215820313 MiB
- Compilation Time: 1,23s

Line: 1 Col: 1 Sel: 0 Lines: 94 Length: 2714 Insert Done parsing in 0,015 seconds

C:\Users\user\Downloads\046\_UAS nomer 2.cpp - Dev-C++ 5.11

File Edit Search View Project Execute Tools AStyle Window Help

(globals)

Project Classes Debug 046\_UAS nomer 1.cpp 046\_UAS nomer 2.cpp

```
67
68 cout<<"* kota tempat pedagang sekarang berada : "<<endl<<endl;
69 cout<<kota1;
70
71 cout<<endl<<endl;
72
73 cout<<"* kota yang diserang naga : "<<endl<<endl;
74 cout<<kota3;
75
76 cout<<endl<<endl;
77
78 cout<<"* kota yang memiliki kastil : "<<endl<<endl;
79 cout<<kota5;
80
81 cout<<endl<<endl;
82
83 cout<<"* jalur yang paling cepat ditempuh : "<<endl<<endl;
84 cout<<kota1<<"- "<<kota4<<"- "<<kota5<<endl;
85
86 cout<<endl<<endl;
87
88 cout<<"* dengan jarak : "<<endl<<endl;
89 cout<<hasil2+hasil7<<endl<<endl;
90
91
92 getch();
93 return 0;
94 }
```

Compiler Resources Compile Log Debug Find Results Close

Compilation results...

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- Warnings: 0
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- Output Size: 1,83621215820313 MiB
- Compilation Time: 1,23s

Line: 1 Col: 1 Sel: 0 Lines: 94 Length: 2714 Insert Done parsing in 0,015 seconds

# -Output

```
C:\Users\user\Downloads\046_UAS nomer 2.exe
_21091397046_

* Jumlah kota yang berada di kerajaan Britan :
5
Kota Pertama : 1
Kota Kedua : 2
Kota Ketiga : 3
Kota Keempat : 4
Kota kelima : 5

* Sisi-sisinya adalah :
12,14,15,23,35,34,45

* Panjang jalan antar kota :
panjang 1 ke 2: 12
panjang 1 ke 4: 11
panjang 1 ke 5: 30
panjang 2 ke 3: 14
panjang 2 ke 5: 5
panjang 3 ke 4: 15
panjang 4 ke 5: 10

* seluruh jalan yang ada dalam kerajaan britan dan panjang jalannya :
(1,2,12) (1,4,11) (1,5,30) (2,3,14) (3,5,5) (3,4,15) (4,5,10)

* kota tempat pedagang sekarang berada :
1

* kota yang diserang naga :
3

* kota yang memiliki kastil :
5

* jalur yang paling cepat ditempuh :
1-4-5

* dengan jarak :
21
```