

**LAPORAN STRUKTUR DATA**  
**PROJECT UAS ADJACENCY**



Disusun oleh:

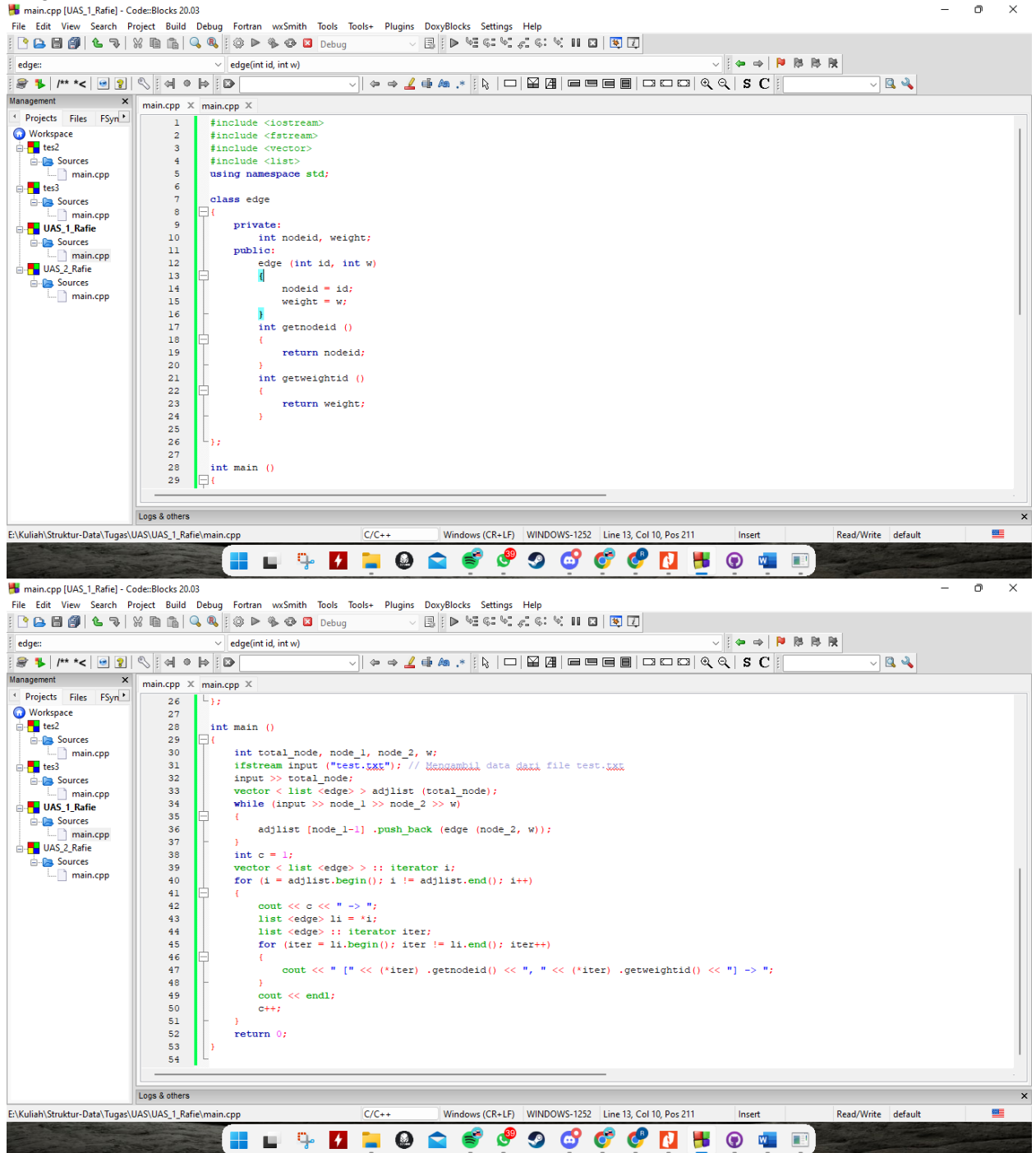
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Kelas: A

**UNIVERSITAS NEGERI SURABAYA**  
**PRODI DIV MANAJEMEN INFORMATIKA 2021**

## SOAL NOMOR 1

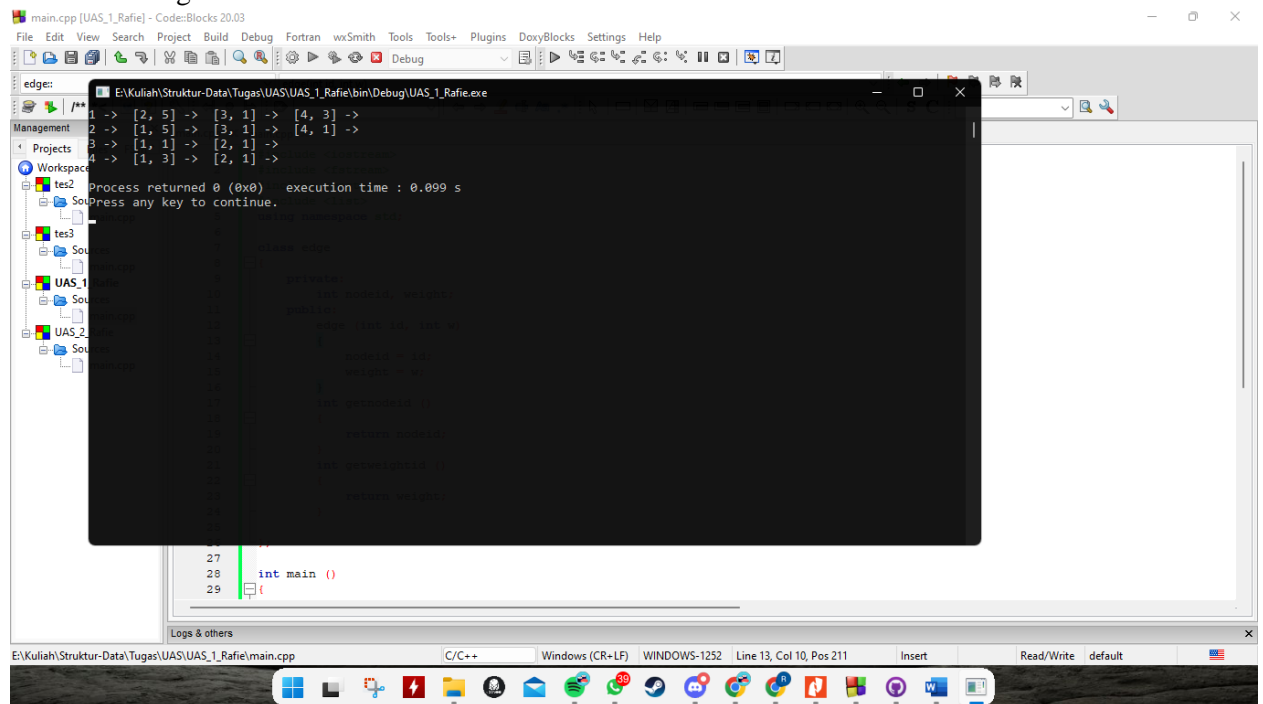
### 1. Program C++



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main.cpp [UAS_1_Rafie] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools- Plugins DoxyBlocks Settings Help
edge(int id, int w)
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Projects Files FSyn
Workspace
tes2
Sources
main.cpp
tes3
Sources
main.cpp
UAS_1_Rafie
Sources
main.cpp
UAS_2_Rafie
Sources
main.cpp
1 #include <iostream>
2 #include <fstream>
3 #include <vector>
4 #include <list>
5 using namespace std;
6
7 class edge
8 {
9 private:
10 int nodeid, weight;
11 public:
12 edge (int id, int w)
13 {
14 nodeid = id;
15 weight = w;
16 }
17 int getNodeid ()
18 {
19 return nodeid;
20 }
21 int getweightid ()
22 {
23 return weight;
24 }
25 };
26
27 int main ()
28 {
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```

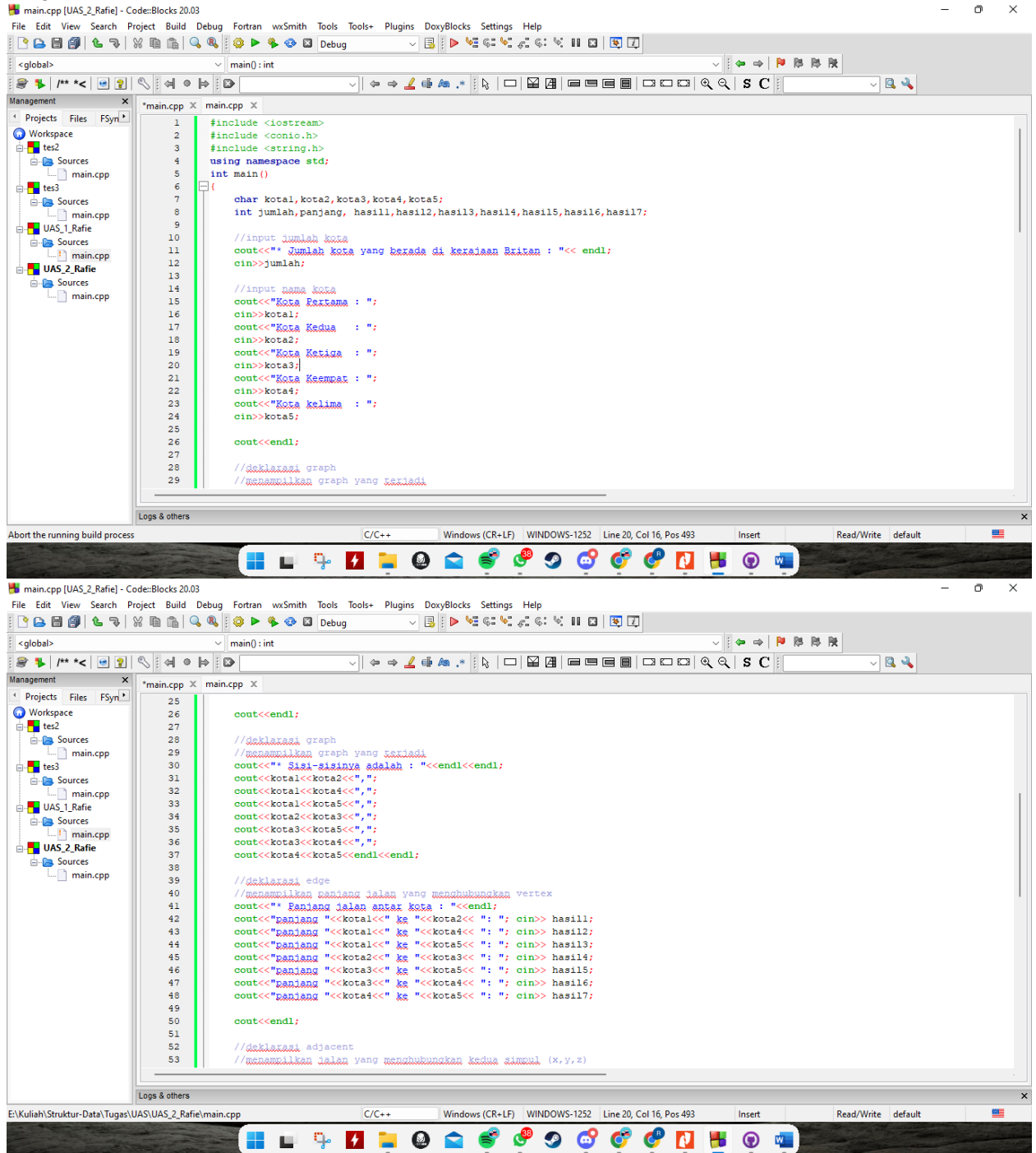
## 2. Hasil Run Program C++



```
main.cpp [UAS_1_Rafie] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
edge:
E:\Kuliah\Struktur-Data\Tugas\UAS_1_Rafie\bin\Debug\UAS_1_Rafie.exe
1 -> [2, 5] -> [3, 1] -> [4, 3] ->
2 -> [1, 5] -> [3, 1] -> [4, 1] ->
3 -> [1, 1] -> [2, 1] ->
4 -> [1, 3] -> [2, 1] ->
Process returned 0 (0x0)   execution time : 0.099 s
Press any key to continue.
Edge
    class edge
    {
    private:
        int nodeid, weight;
    public:
        edge(int id, int w)
        {
            nodeid = id;
            weight = w;
        }
        int getnodeid()
        {
            return nodeid;
        }
        int getweight()
        {
            return weight;
        }
    };
27
28 int main ()
29 {
```

## SOAL NOMOR 2

### 1. Program C++



```
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    //input jumlah kota
11    cout<<"* Jumlah kota yang berada di kerajaan Britan : "<<endl;
12    cin>>jumlah;
13
14    //input nama kota
15    cout<<"Kota Pertama : ";
16    cin>>kota1;
17    cout<<"Kota Kedua : ";
18    cin>>kota2;
19    cout<<"Kota Ketiga : ";
20    cin>>kota3;
21    cout<<"Kota Keempat : ";
22    cin>>kota4;
23    cout<<"Kota kelima : ";
24    cin>>kota5;
25
26    cout<<endl;
27
28    //deklarasi graph
29    //memuliskan graph yang terjadi
30    cout<<"* Sisi-sisinya adalah : "<<endl<<endl;
31    cout<<kota1<<kota2<<" ";
32    cout<<kota1<<kota4<<" ";
33    cout<<kota1<<kota5<<" ";
34    cout<<kota2<<kota3<<" ";
35    cout<<kota3<<kota5<<" ";
36    cout<<kota3<<kota4<<" ";
37    cout<<kota4<<kota5<<endl<<endl;
38
39    //deklarasi edge
40    //memuliskan panjang jalan yang menghubungkan vertex
41    cout<<"* Panjang jalan antar kota : "<<endl;
42    cout<<"panjang "<<kota1<<" ke "<<kota2<<" : "; cin>> hasil1;
43    cout<<"panjang "<<kota1<<" ke "<<kota4<<" : "; cin>> hasil2;
44    cout<<"panjang "<<kota1<<" ke "<<kota5<<" : "; cin>> hasil3;
45    cout<<"panjang "<<kota2<<" ke "<<kota3<<" : "; cin>> hasil4;
46    cout<<"panjang "<<kota3<<" ke "<<kota5<<" : "; cin>> hasil5;
47    cout<<"panjang "<<kota3<<" ke "<<kota4<<" : "; cin>> hasil6;
48    cout<<"panjang "<<kota4<<" ke "<<kota5<<" : "; cin>> hasil7;
49
50    cout<<endl;
51
52    //deklarasi adjacent
53    //memuliskan jalan yang menghubungkan kedua simpul (x,y,z)
```

main.cpp [UAS\_2\_Rafie] - Code::Blocks 20.03

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<global> main():int

Management

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      - main.cpp
  - UAS\_1\_Rafie
    - Sources
      - main.cpp
  - UAS\_2\_Rafie
    - Sources
      - main.cpp

```
52 //membuatkan adjacent
53 //mendapatkan jalan yang menghubungkan kedua simpul (x,y,z)
54 cout<<"seluruh jalan yang ada dalam kota akan ditulis dan panjang jalannya : "<< endl;
55 cout<<"("<<kota1<<","<<kota2<<","<<hasil1<<") ";
56 cout<<"("<<kota1<<","<<kota4<<","<<hasil12<<") ";
57 cout<<"("<<kota1<<","<<kota5<<","<<hasil13<<") ";
58 cout<<"("<<kota2<<","<<kota3<<","<<hasil14<<") ";
59 cout<<"("<<kota3<<","<<kota5<<","<<hasil15<<") ";
60 cout<<"("<<kota3<<","<<kota4<<","<<hasil16<<") ";
61 cout<<"("<<kota4<<","<<kota5<<","<<hasil17<<") ";
62
63 cout<<endl<<endl;
64
65 //hasil
66 //mendapatkan tempat pedagang berada
67 cout<<"* kota tempat pedagang sekarang berada : "<<endl<<endl;
68 cout<<kota1;
69
70 cout<<endl<<endl;
71
72 //mendapatkan kota yang diserang naga
73 cout<<"* kota yang diserang naga : "<<endl<<endl;
74 cout<<kota3;
75
76 cout<<endl<<endl;
77
78 //mendapatkan kota yang terdapat kastil
79 cout<<"* kota yang memiliki kastil : "<<endl<<endl;
80 cout<<kota5;
```

Logs & others

E:\Kuliah\Struktur-Data\tugas\UAS\UAS\_2\_Rafie\main.cpp C/C++ Windows (CR+LF) WINDOWS-1252 Line 20, Col 16, Pos 493 Insert Read/Write default

main.cpp [UAS\_2\_Rafie] - Code::Blocks 20.03

File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help

<global> main():int

Management

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  - tes3
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      - main.cpp
  - UAS\_1\_Rafie
    - Sources
      - main.cpp
  - UAS\_2\_Rafie
    - Sources
      - main.cpp

```
69
70 cout<<endl<<endl;
71
72 //mendapatkan kota yang diserang naga
73 cout<<"* kota yang diserang naga : "<<endl<<endl;
74 cout<<kota3;
75
76 cout<<endl<<endl;
77
78 //mendapatkan kota yang terdapat kastil
79 cout<<"* kota yang memiliki kastil : "<<endl<<endl;
80 cout<<kota5;
81
82 cout<<endl<<endl;
83
84 //mendapatkan vertex tercepat untuk selamat
85 cout<<"* jalur yang paling cepat ditempuh : "<<endl<<endl;
86 cout<<kota1<<"-("<<kota4<<","<<kota5<<endl;
87
88 cout<<endl<<endl;
89
90 //total edge yang harus ditempuh
91 cout<<"* dengan jarak : "<<endl<<endl;
92 cout<<hasil12+hasil17<<endl<<endl;
93
94 getch();
95 return 0;
96
97 }
```

Logs & others

E:\Kuliah\Struktur-Data\tugas\UAS\UAS\_2\_Rafie\main.cpp C/C++ Windows (CR+LF) WINDOWS-1252 Line 20, Col 16, Pos 493 Insert Read/Write default

## 2. Hasil Run Program C++

The first screenshot shows the initial state of the program. It displays the number of cities (5) and the distances between them. The cities are labeled q, w, e, r, and t. The distances are: q to w is 12, q to r is 11, q to t is 30, w to e is 14, e to t is 5, and r to t is 10. The program then identifies the cities in the kingdom of Britain and the length of the paths. The cities are q, w, e, r, and t. The paths are: q to w (12), q to r (11), q to t (30), w to e (14), e to t (5), and r to t (10). The program then identifies the cities in the kingdom of Britain and the length of the paths. The cities are q, w, e, r, and t. The paths are: q to w (12), q to r (11), q to t (30), w to e (14), e to t (5), and r to t (10).

```
main.cpp [UAS_2_Rafie] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
E:\Kuliah\Struktur-Data\Tugas\UAS_2_Rafie\bin\Debug\UAS_2_Rafie.exe
* Jumlah kota yang berada di kerajaan Britan :
5
* Kota Pertama : q
* Kota Kedua : w
* Kota Ketiga : e
* Kota Keempat : r
* Kota Kelima : t
* Sisi-sisinya adalah :
qw,qr,qt,we,et,er,rt
* Panjang jalan antar kota :
panjang q ke w: 12
panjang q ke r: 11
panjang q ke t: 30
panjang w ke e: 14
panjang e ke t: 5
panjang r ke t: 10
* seluruh jalan yang ada dalam kerajaan britan dan panjang jalannya :
(q,w,12) (q,r,11) (q,t,30) (w,e,14) (e,t,5) (e,r,15) (r,t,10)
* kota tempat pedagang sekarang berada :
q
* kota yang diserang naga :
return 0;
```

The second screenshot shows the program continuing its execution. It displays the cities in the kingdom of Britain and the length of the paths. The cities are q, w, e, r, and t. The paths are: q to w (12), q to r (11), q to t (30), w to e (14), e to t (5), and r to t (10). The program then identifies the cities in the kingdom of Britain and the length of the paths. The cities are q, w, e, r, and t. The paths are: q to w (12), q to r (11), q to t (30), w to e (14), e to t (5), and r to t (10).

```
main.cpp [UAS_2_Rafie] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
E:\Kuliah\Struktur-Data\Tugas\UAS_2_Rafie\bin\Debug\UAS_2_Rafie.exe
panjang e ke r: 15
panjang r ke t: 10
* seluruh jalan yang ada dalam kerajaan britan dan panjang jalannya :
(q,w,12) (q,r,11) (q,t,30) (w,e,14) (e,t,5) (e,r,15) (r,t,10)
* kota tempat pedagang sekarang berada :
q
* kota yang diserang naga :
* kota yang memiliki kastil :
* jalur yang paling cepat ditempuh :
q-r-t
* dengan jarak :
return 0;
```