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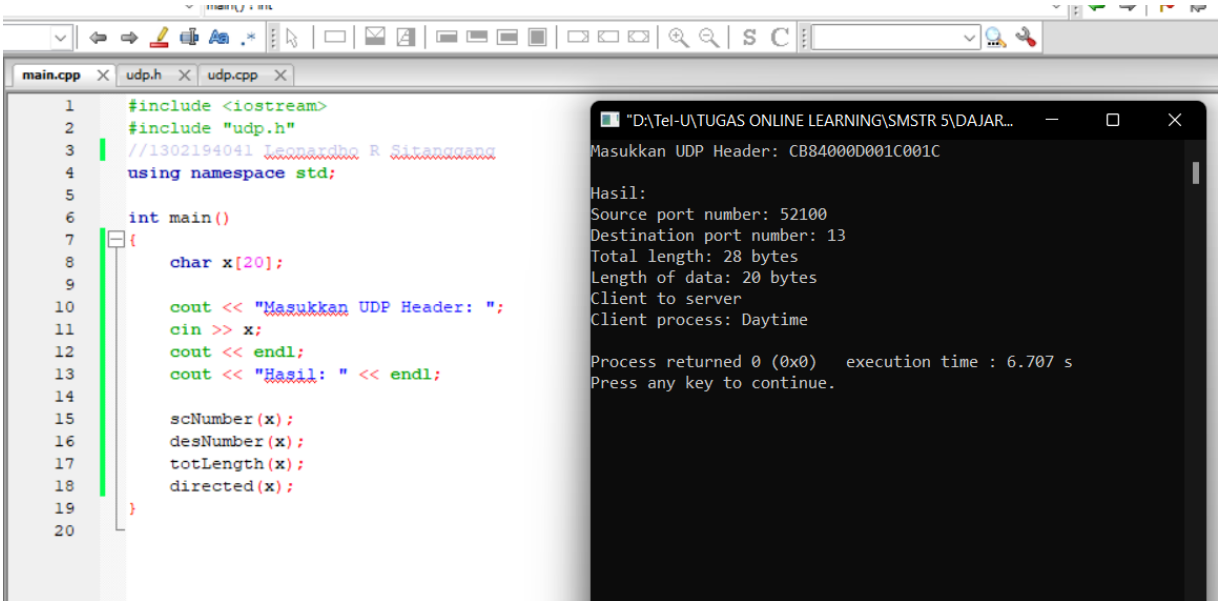
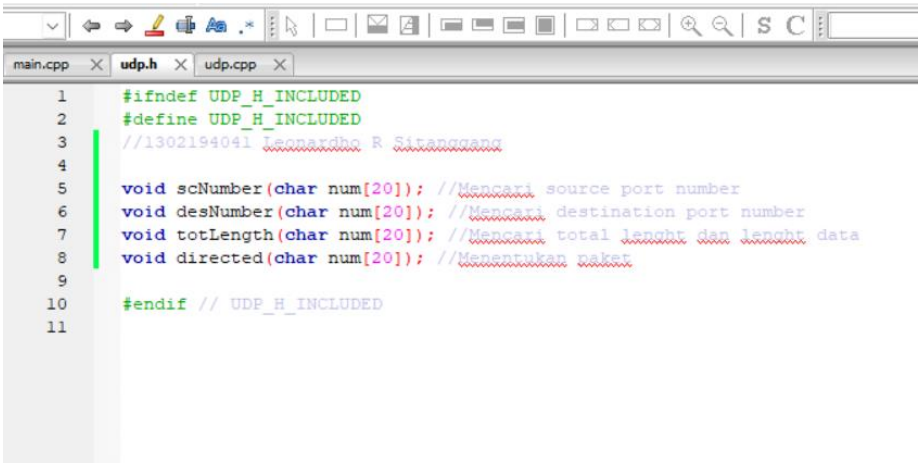
Tugas UDP menggunakan bahas C++

Main.cpp dan output



Udp.h



Udp.cpp

main.cpp | udp.h | udp.cpp

```cpp
#include "udp.h"
#include<iostream>
#include<string.h>
#include<math.h>
//1302194041 Leonardho R Sitanggang

using namespace std;

void scNumber(char num[20]){
    //Menggunakan 4 digit pertama dari udp
    int i, r, len, hex = 0;
    len = 4;
    i = 0;
    while (num[i] != '\0'){
        len--;
        if(num[i] >= '0' && num[i] <= '9'){
            r = num[i] - 48;
        } else if(num[i] >= 'a' && num[i] <= 'f'){
                r = num[i] - 87;
        } else if(num[i] >= 'A' && num[i] <= 'F'){
                    r = num[i] - 55;
        }
        hex += r * pow(16,len);
        i++;
    }
    cout << "Source port number: " << hex << endl;
}

void desNumber(char num[20]){
    //Menggunakan 4 digit kedua dari udp
    int i, r, len, hex = 0;
    len = 4;
    i = 4;
```

main.cpp | udp.h | udp.cpp

```cpp
    while (num[i] != '\0'){
        len--;
        if(num[i] >= '0' && num[i] <= '9'){
            r = num[i] - 48;
        } else if(num[i] >= 'a' && num[i] <= 'f'){
                r = num[i] - 87;
        } else if(num[i] >= 'A' && num[i] <= 'F'){
                    r = num[i] - 55;
        }
        hex += r * pow(16,len);
        i++;
    }
    cout << "Destination port number: " << hex << endl;
}

void totLength(char num[20]){
    //Menggunakan 4 digit terakhir dari udp
    int i, r, len, hex = 0;
    len = 4;
    i = 12;
    while (num[i] != '\0'){
        len--;
        if(num[i] >= '0' && num[i] <= '9'){
            r = num[i] - 48;
        } else if(num[i] >= 'a' && num[i] <= 'f'){
                r = num[i] - 87;
        } else if(num[i] >= 'A' && num[i] <= 'F'){
                    r = num[i] - 55;
        }
        hex += r * pow(16,len);
        i++;
    }
    cout << "Total length: " << hex << " bytes" << endl;
```

main.cpp | udp.h | udp.cpp

```
67      cout << "Length of data: " << hex - 8 << " bytes" << endl;
68  }
69
70  void directed(char num[20]){
71      //Menggunakan 4 digit kedua dari udp
72      int i, r, len, hex = 0;
73      len = 4;
74      i = 4;
75      while (num[i] != '\0'){
76          len--;
77          if(num[i] >= '0' && num[i] <= '9'){
78              r = num[i] - 48;
79          } else if(num[i] >= 'a' && num[i] <= 'f'){
80                  r = num[i] - 87;
81          } else if(num[i] >= 'A' && num[i] <= 'F'){
82                      r = num[i] - 55;
83          }
84          hex += r * pow(16,len);
85          i++;
86      }
87
88      //Registered port
89      if (hex == 7){
90          cout << "Client to server" << endl;
91          cout << "Client process: Echo" << endl;
92      } else if(hex == 9){
93          cout << "Client to server" << endl;
94          cout << "Client process: Discard" << endl;
95      } else if(hex == 13){
96          cout << "Client to server" << endl;
97          cout << "Client process: Daytime" << endl;
98      } else if(hex == 17){
99          cout << "Client to server" << endl;
```

main.cpp | udp.h | udp.cpp

```
100         cout << "Client process: Quote" << endl;
101     } else if(hex == 19){
102         cout << "Client to server" << endl;
103         cout << "Client process: Chagen" << endl;
104     } else if(hex == 53){
105         cout << "Client to server" << endl;
106         cout << "Client process: DNS" << endl;
107     } else if(hex == 67){
108         cout << "Client to server" << endl;
109         cout << "Client process: DHCP server / Bootps" << endl;
110     } else if(hex == 68){
111         cout << "Client to server" << endl;
112         cout << "Client process: DHCP client / Bootpc" << endl;
113     } else if(hex == 69){
114         cout << "Client to server" << endl;
115         cout << "Client process: TFTP" << endl;
116     } else if(hex == 111){
117         cout << "Client to server" << endl;
118         cout << "Client process: RPC" << endl;
119     } else if(hex == 123){
120         cout << "Client to server" << endl;
121         cout << "Client process: NTP" << endl;
122     } else if(hex == 161){
123         cout << "Client to server" << endl;
124         cout << "Client process: SNMP" << endl;
125     } else if(hex == 162){
126         cout << "Client to server" << endl;
127         cout << "Client process: SNMP traps" << endl;
128     } else if(hex >= 1011 && hex <= 1023){
129         cout << "Client to server" << endl;
130         cout << "Client process: Reserved" << endl;
131     } else if(hex == 1024){
132         cout << "User / Registered Port" << endl;
```

main.cpp | udp.h | udp.cpp

```
133             cout << "Client process: Reserved" << endl;
134         } else if(hex == 1025){
135             cout << "User / Registered Port" << endl;
136             cout << "Client process: Blackjack" << endl;
137         } else if(hex == 1026){
138             cout << "User / Registered Port" << endl;
139             cout << "Client process: CAP" << endl;
140         } else if(hex == 1027){
141             cout << "User / Registered Port" << endl;
142             cout << "Client process: Exosee" << endl;
143         } else if(hex == 1029){
144             cout << "User / Registered Port" << endl;
145             cout << "Client process: Solidmux" << endl;
146         } else if(hex == 1102){
147             cout << "User / Registered Port" << endl;
148             cout << "Client process: Adobe 1" << endl;
149         } else if(hex == 1103){
150             cout << "User / Registered Port" << endl;
151             cout << "Client process: Adobe 2" << endl;
152         } else if(hex == 44553){
153             cout << "User / Registered Port" << endl;
154             cout << "Client process: Rbr-debug" << endl;
155         } else if(hex == 46999){
156             cout << "User / Registered Port" << endl;
157             cout << "Client process: Mediabox" << endl;
158         } else if(hex == 47557){
159             cout << "User / Registered Port" << endl;
160             cout << "Client process: Dbbrowse" << endl;
161         } else if(hex >= 48620 && hex <= 49150){
162             cout << "User / Registered Port" << endl;
163             cout << "Client process: Unassigned" << endl;
164         } else if(hex == 49151){
165             cout << "User / Registered Port" << endl;
```

Logs & others

```
165             cout << "User / Registered Port" << endl;
166             cout << "Client process: Reserved" << endl;
167         } else if(hex >= 49152 && hex <= 65535){
168             cout << "Dynamic / Private / Ephemeral Port" << endl;
169         } else {
170             cout << "Not registered port" << endl;
171         }
172     }
```