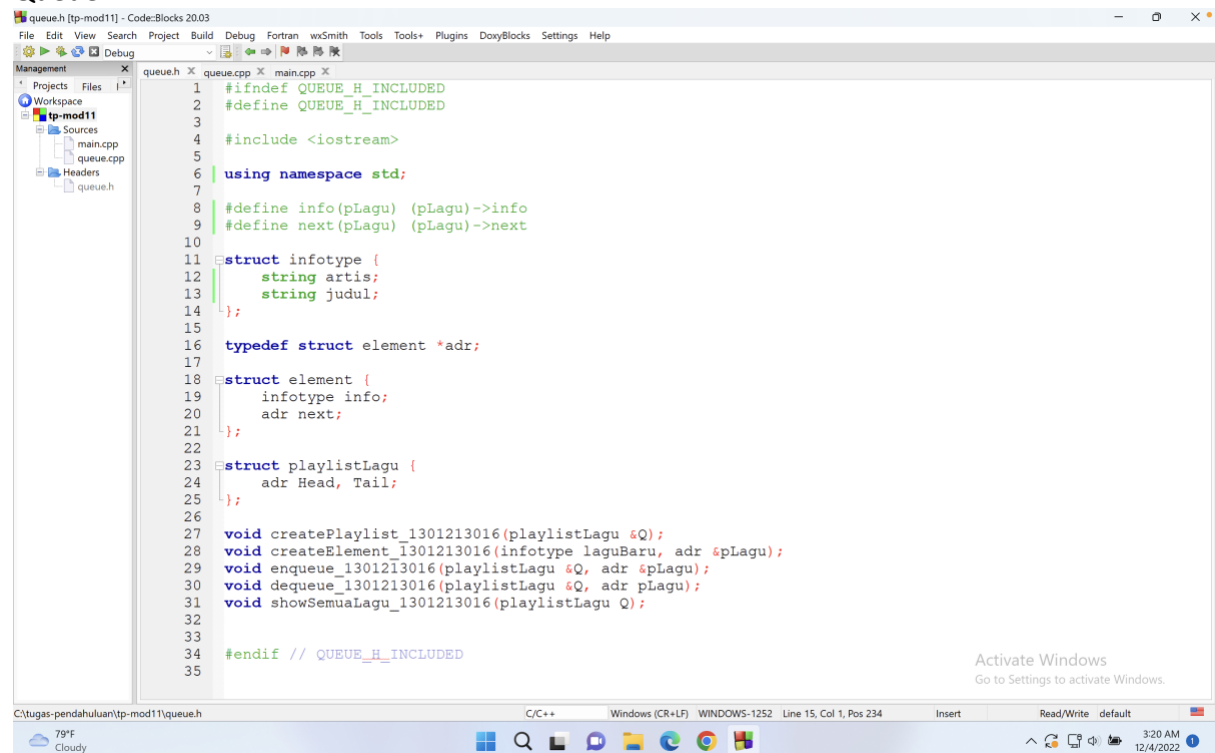Nama   : Fawaz Al Rasyid
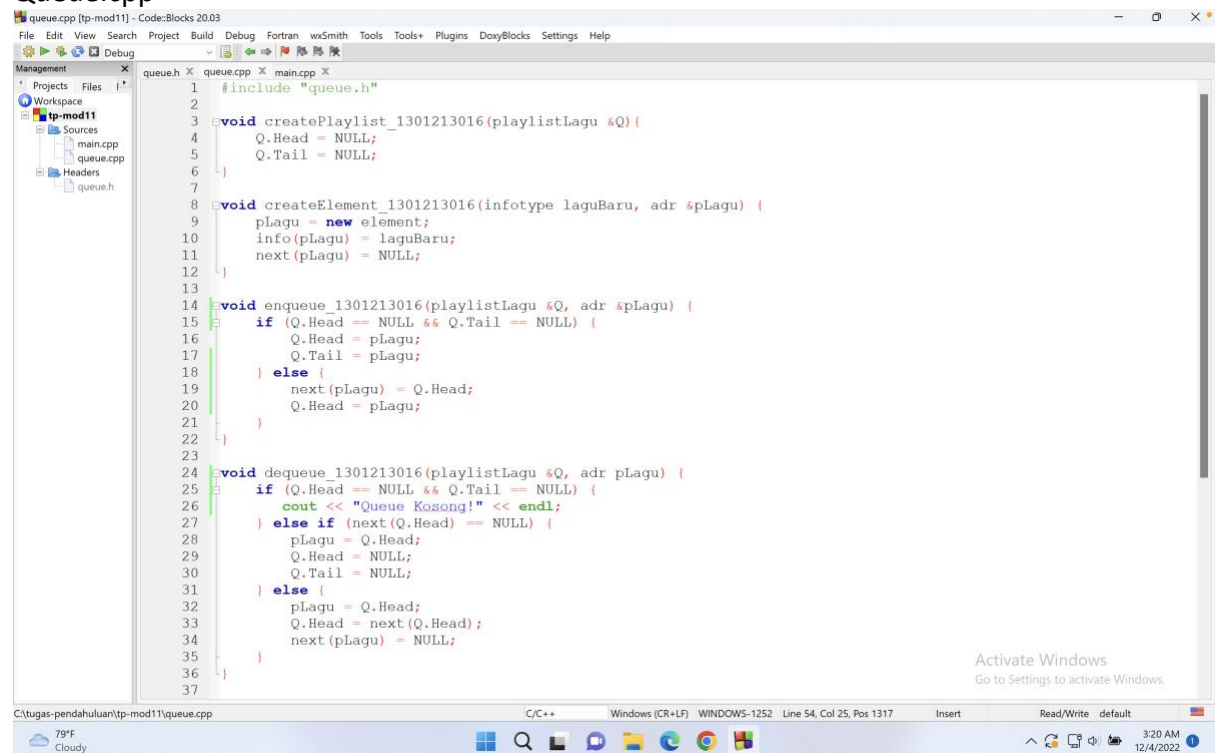NIM   : 1301213016
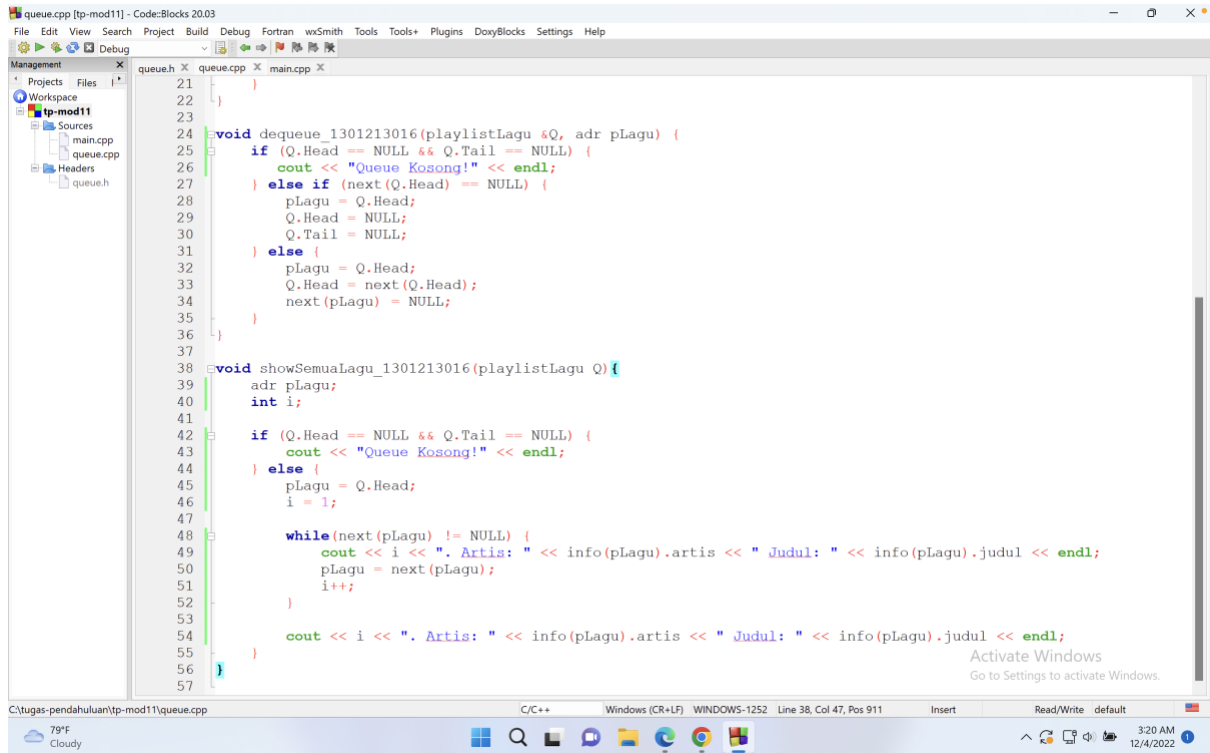
Queue.h


```cpp
#ifndef QUEUE_H_INCLUDED
#define QUEUE_H_INCLUDED

#include <iostream>

using namespace std;

#define info(pLagu) (pLagu)->info
#define next(pLagu) (pLagu)->next

struct infotype {
    string artis;
    string judul;
};

typedef struct element *adr;

struct element {
    infotype info;
    adr next;
};

struct playlistLagu {
    adr Head, Tail;
};

void createPlaylist_1301213016(playlistLagu &Q);
void createElement_1301213016(infotype laguBaru, adr &pLagu);
void enqueue_1301213016(playlistLagu &Q, adr &pLagu);
void dequeue_1301213016(playlistLagu &Q, adr pLagu);
void showSemuaLagu_1301213016(playlistLagu Q);


#endif // QUEUE_H_INCLUDED
```
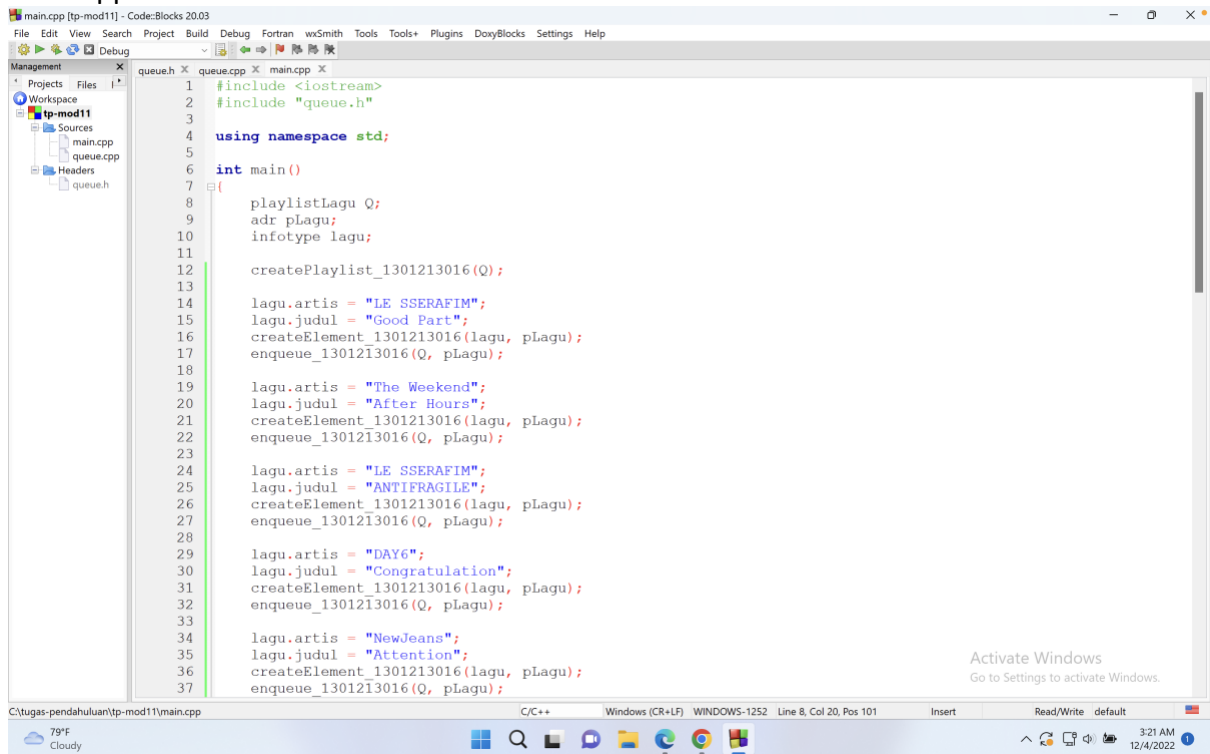
Queue.cpp


```cpp
#include "queue.h"

void createPlaylist_1301213016(playlistLagu &Q){
    Q.Head = NULL;
    Q.Tail = NULL;
}

void createElement_1301213016(infotype laguBaru, adr &pLagu) {
    pLagu = new element;
    info(pLagu) = laguBaru;
    next(pLagu) = NULL;
}

void enqueue_1301213016(playlistLagu &Q, adr &pLagu) {
    if (Q.Head == NULL && Q.Tail == NULL) {
        Q.Head = pLagu;
        Q.Tail = pLagu;
    } else {
        next(pLagu) = Q.Head;
        Q.Head = pLagu;
    }
}

void dequeue_1301213016(playlistLagu &Q, adr pLagu) {
    if (Q.Head == NULL && Q.Tail == NULL) {
        cout << "Queue Kosong!" << endl;
    } else if (next(Q.Head) == NULL) {
        pLagu = Q.Head;
        Q.Head = NULL;
        Q.Tail = NULL;
    } else {
        pLagu = Q.Head;
        Q.Head = next(Q.Head);
        next(pLagu) = NULL;
    }
}
```

```cpp
 21          }
 22      }
 23
 24  void dequeue_1301213016(playlistLagu &Q, adr pLagu) {
 25      if (Q.Head == NULL && Q.Tail == NULL) {
 26          cout << "Queue Kosong!" << endl;
 27      } else if (next(Q.Head) == NULL) {
 28          pLagu = Q.Head;
 29          Q.Head = NULL;
 30          Q.Tail = NULL;
 31      } else {
 32          pLagu = Q.Head;
 33          Q.Head = next(Q.Head);
 34          next(pLagu) = NULL;
 35      }
 36  }
 37
 38  void showSemuaLagu_1301213016(playlistLagu Q){
 39      adr pLagu;
 40      int i;
 41
 42      if (Q.Head == NULL && Q.Tail == NULL) {
 43          cout << "Queue Kosong!" << endl;
 44      } else {
 45          pLagu = Q.Head;
 46          i = 1;
 47
 48          while(next(pLagu) != NULL) {
 49              cout << i << ". Artis: " << info(pLagu).artis << " Judul: " << info(pLagu).judul << endl;
 50              pLagu = next(pLagu);
 51              i++;
 52          }
 53
 54          cout << i << ". Artis: " << info(pLagu).artis << " Judul: " << info(pLagu).judul << endl;
 55      }
 56  }
 57
```

C:\tugas-pendahuluan\tp-mod11\queue.cpp   C/C++   Windows (CR+LF)   WINDOWS-1252   Line 38, Col 47, Pos 911   Insert   Read/Write   default

Main.cpp

```cpp
  1  #include <iostream>
  2  #include "queue.h"
  3
  4  using namespace std;
  5
  6  int main()
  7  {
  8      playlistLagu Q;
  9      adr pLagu;
 10      infotype lagu;
 11
 12      createPlaylist_1301213016(Q);
 13
 14      lagu.artis = "LE SSERAFIM";
 15      lagu.judul = "Good Part";
 16      createElement_1301213016(lagu, pLagu);
 17      enqueue_1301213016(Q, pLagu);
 18
 19      lagu.artis = "The Weekend";
 20      lagu.judul = "After Hours";
 21      createElement_1301213016(lagu, pLagu);
 22      enqueue_1301213016(Q, pLagu);
 23
 24      lagu.artis = "LE SSERAFIM";
 25      lagu.judul = "ANTIFRAGILE";
 26      createElement_1301213016(lagu, pLagu);
 27      enqueue_1301213016(Q, pLagu);
 28
 29      lagu.artis = "DAY6";
 30      lagu.judul = "Congratulation";
 31      createElement_1301213016(lagu, pLagu);
 32      enqueue_1301213016(Q, pLagu);
 33
 34      lagu.artis = "NewJeans";
 35      lagu.judul = "Attention";
 36      createElement_1301213016(lagu, pLagu);
 37      enqueue_1301213016(Q, pLagu);
```

C:\tugas-pendahuluan\tp-mod11\main.cpp   C/C++   Windows (CR+LF)   WINDOWS-1252   Line 8, Col 20, Pos 101   Insert   Read/Write   default

```cpp
40        lagu.judul = "Mawar Jingga";
41        createElement_1301213016(lagu, pLagu);
42        enqueue_1301213016(Q, pLagu);
43
44        lagu.artis = "Hivi!";
45        lagu.judul = "Remaja";
46        createElement_1301213016(lagu, pLagu);
47        enqueue_1301213016(Q, pLagu);
48
49        lagu.artis = "NewJeans";
50        lagu.judul = "Hype Boy";
51        createElement_1301213016(lagu, pLagu);
52        enqueue_1301213016(Q, pLagu);
53
54        lagu.artis = "Sheila On 7";
55        lagu.judul = "Dan...";
56        createElement_1301213016(lagu, pLagu);
57        enqueue_1301213016(Q, pLagu);
58
59        lagu.artis = "Tulus";
60        lagu.judul = "Sewindu";
61        createElement_1301213016(lagu, pLagu);
62        enqueue_1301213016(Q, pLagu);
63
64        lagu.artis = "Tulus";
65        lagu.judul = "Labirin";
66        createElement_1301213016(lagu, pLagu);
67        enqueue_1301213016(Q, pLagu);
68
69        lagu.artis = "NMIXX";
70        lagu.judul = "DICE";
71        createElement_1301213016(lagu, pLagu);
72        enqueue_1301213016(Q, pLagu);
73
74        lagu.artis = "Juicy Luicy";
75        lagu.judul = "Lantas";
76        createElement_1301213016(lagu, pLagu);
```

```cpp
73
74        lagu.artis = "Juicy Luicy";
75        lagu.judul = "Lantas";
76        createElement_1301213016(lagu, pLagu);
77        enqueue_1301213016(Q, pLagu);
78
79        lagu.artis = "LE SSERAFIM";
80        lagu.judul = "Blue Flame";
81        createElement_1301213016(lagu, pLagu);
82        enqueue_1301213016(Q, pLagu);
83
84        lagu.artis = "Yovie Widianto, Tulus, Glenn Fredly";
85        lagu.judul = "Adu Rayu";
86        createElement_1301213016(lagu, pLagu);
87        enqueue_1301213016(Q, pLagu);
88
89        lagu.artis = "Utha Likumahuwa";
90        lagu.judul = "Sesaat Kau Hadir";
91        createElement_1301213016(lagu, pLagu);
92        enqueue_1301213016(Q, pLagu);
93
94        lagu.artis = "DPR LIVE";
95        lagu.judul = "Jasmine";
96        createElement_1301213016(lagu, pLagu);
97        enqueue_1301213016(Q, pLagu);
98
99        cout << "Queue Awal" << endl;
100       showSemuaLagu_1301213016(Q);
101
102       cout << "\nQueue setelah item dihapus" << endl;
103       dequeue_1301213016(Q, pLagu);
104
105       showSemuaLagu_1301213016(Q);
106
107       return 0;
108   }
109
```

Output

```
Queue Awal
1. Artis: DPR LIVE Judul: Jasmine
2. Artis: Utha Likumahuwa Judul: Sesaat Kau Hadir
3. Artis: Yovie Widianto, Tulus, Glenn Fredly Judul: Adu Rayu
4. Artis: LE SSERAFIM Judul: Blue Flame
5. Artis: Juicy Luicy Judul: Lantas
6. Artis: NMIXX Judul: DICE
7. Artis: Tulus Judul: Labirin
8. Artis: Tulus Judul: Sewindu
9. Artis: Sheila On 7 Judul: Dan...
10. Artis: NewJeans Judul: Hype Boy
11. Artis: Hivi! Judul: Remaja
12. Artis: Juicy Luicy Judul: Mawar Jingga
13. Artis: NewJeans Judul: Attention
14. Artis: DAY6 Judul: Congratulation
15. Artis: LE SSERAFIM Judul: ANTIFRAGILE
16. Artis: The Weekend Judul: After Hours
17. Artis: LE SSERAFIM Judul: Good Part

Queue setelah item dihapus
1. Artis: Utha Likumahuwa Judul: Sesaat Kau Hadir
2. Artis: Yovie Widianto, Tulus, Glenn Fredly Judul: Adu Rayu
3. Artis: LE SSERAFIM Judul: Blue Flame
4. Artis: Juicy Luicy Judul: Lantas
5. Artis: NMIXX Judul: DICE
6. Artis: Tulus Judul: Labirin
7. Artis: Tulus Judul: Sewindu
8. Artis: Sheila On 7 Judul: Dan...
9. Artis: NewJeans Judul: Hype Boy
10. Artis: Hivi! Judul: Remaja
11. Artis: Juicy Luicy Judul: Mawar Jingga
12. Artis: NewJeans Judul: Attention
13. Artis: DAY6 Judul: Congratulation
14. Artis: LE SSERAFIM Judul: ANTIFRAGILE
15. Artis: The Weekend Judul: After Hours
16. Artis: LE SSERAFIM Judul: Good Part

Process returned 0 (0x0)   execution time : 0.207 s
Press any key to continue.
```