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Kelas : TI-24-PA

Matkul : Lab. Desain dan Analisis Algoritma

Github : https://github.com/RicoSteven120206/Desain_Analisis_Algoritma.git

Tugas : Buatlah program C++ berkaitan dengan antrian loket menggunakan konsep Queue

1. **Screenshot Source Code**

```cpp
#include <iostream>
#include <cstring>
#include <limits>
using namespace std;

class Queue {
    private:
        int count;
        int MAX;
        string* data;

    public:
        Queue() {
            count = 0;
            MAX = 0;
        }

        void setCount(int x) {
            MAX = x;
            data = new string[MAX];
        }

        int size() {
            return count;
        }
```

```cpp
26
27  bool isEmpty() {
28      if (count == 0) {
29          return true;
30      } else {
31          return false;
32      }
33  }
34
35  bool isFull() {
36      if (count >= MAX) {
37          return true;
38      } else {
39          return false;
40      }
41  }
42
43  void enqueue() {
44      if (isFull()) {
45          cout<<"Antrian Penuh...";
46      } else {
47          cin.ignore(numeric_limits<streamsize>::max(), '\n');
48          cout<<"Masukkan Antrian: ";
49          getline(cin, data[count]);
50          count++;
51      }
52  }
53
53
54  int dequeue() {
55      if (isEmpty()) {
56          cout<<"Antrian Kosong."<<endl;
57      } else {
58          for (int a = 0; a < count-1; a++) {
59              data[a] = data[a+1];
60          }
61          count--;
62      }
63  }
64
65  int view() {
66      if (isEmpty()) {
67          cout<<"Antrian Kosong..."<<endl;
68      } else {
69          cout<<"+--------------------+"<<endl;
70          cout<<"|     DATA ANTRIAN    |"<<endl;
71          cout<<"+--------------------+"<<endl;
72          for (int a = count-1; a >= 0; a--) {
73              cout<<"Antri "<<a+1<<" = "<<data[a]<<endl;
74          }
75      }
76
```

```cpp
76
77              if (isFull()) {
78                  cout<<"Antrian Penuh..."<<endl;
79              }
80              cout<<endl;
81          }
82  };
83
84  int main() {
85      int pilih;
86      int n;
87      string isi;
88      string ans;
89      Queue que;
90
91      cout<<"Masukkan Jumlah Antrian Tiket di Loket: ";
92      cin>>n;
93      que.setCount(n);
94
94
95      antri:
96          system("cls");
97      cout<<"+----------------+"<<endl;
98      cout<<"| ANTRIAN TIKET |"<<endl;
99      cout<<"+----------------+"<<endl;
100     cout<<"|1. Masuk Antri |"<<endl;
101     cout<<"|2. Keluar Antri|"<<endl;
102     cout<<"|3. Jumlah Antri|"<<endl;
103     cout<<"|4. Lihat Antri |"<<endl;
104     cout<<"|5. Exit Antri  |"<<endl;
105     cout<<"+----------------+"<<endl;
106     cout<<"-> Pilih: ";
107     cin>>pilih;
108
109     if (pilih == 1) {
110         system("cls");
111         que.enqueue();
112         goto antri;
113     } else if (pilih == 2) {
114         que.dequeue();
115         goto antri;
116     } else if (pilih == 3) {
117         system("cls");
118         cout<<"Jumlah Antrian: "<<que.size()<<endl;
119         cout<<"\nTekan 1 Untuk Lanjut Program"<<endl;
120         cin>>ans;
121         if (ans == "1") {
122             goto antri;
```

```
113          } else if (pilih == 2) {
114              que.dequeue();
115              goto antri;
116          } else if (pilih == 3) {
117              system("cls");
118              cout<<"Jumlah Antrian: "<<que.size()<<endl;
119              cout<<"\nTekan 1 Untuk Lanjut Program"<<endl;
120              cin>>ans;
121              if (ans == "1") {
122                  goto antri;
123              } else {
124                  return false;
125              }
126          } else if (pilih == 4) {
127              system("cls");
128              que.view();
129              cout<<"\nTekan 1 Untuk Lanjut Program"<<endl;
130              cin>>ans;
131              if (ans == "1") {
132                  goto antri;
133              } else {
134                  return false;
135              }
136          } else if (pilih == 5) {
137              system("cls");
138              cout<<"Terima Kasih...\n";
139          }
140      return 0;
141  }
```

2. **Screenshot Output**

   1. **Tampilan Awal untuk menentukan jumlah antrian**

   ```
   Masukkan Jumlah Antrian Tiket di Loket: 5
   ```

   2. **Tampilan Menu**

   ```
   +---------------+
   | ANTRIAN TIKET |
   +---------------+
   |1. Masuk Antri |
   |2. Keluar Antri|
   |3. Jumlah Antri|
   |4. Lihat Antri |
   |5. Exit Antri  |
   +---------------+
   -> Pilih: _
   ```

   3. **Tampilan Ketika pilih nomor 1 atau masukkan antrian**

   ```
   Masukkan Antrian: Anton Sugiarti
   ```

   ```
   Masukkan Antrian: Daffa Abdul Mufid
   ```

   ```
   Masukkan Antrian: Frederico Steven Kwok
   ```

   ```
   Masukkan Antrian: William Obrient Chan
   ```

   ```
   Masukkan Antrian: Sudrajat_
   ```

   Maka jika dilihat dari data antrian nya

```
+----------------------+
|      DATA ANTRIAN    |
+----------------------+
Antri 5 = Sudrajat
Antri 4 = William Obrient Chan
Antri 3 = Frederico Steven Kwok
Antri 2 = Daffa Abdul Mufid
Antri 1 = Anton Sugiarti
Antrian Penuh...


Tekan 1 Untuk Lanjut Program
```

4. **Tampilan/Output ketika pilih nomor 2 atau mengeluarkan antrian**

```
+----------------------+
|      DATA ANTRIAN    |
+----------------------+
Antri 4 = Sudrajat
Antri 3 = William Obrient Chan
Antri 2 = Frederico Steven Kwok
Antri 1 = Daffa Abdul Mufid


Tekan 1 Untuk Lanjut Program
```

Antrian kesatu akan keluar lebih dahulu

5. **Tampilan nomor 3 jika Ingin melihat jumlah antrian yang masuk**

```
Jumlah Antrian: 4

Tekan 1 Untuk Lanjut Program
```

6. **Tampilan nomor 4 untuk melihat data antrian**

```
+----------------------+
|      DATA ANTRIAN    |
+----------------------+
Antri 5 = Sudrajat
Antri 4 = William Obrient Chan
Antri 3 = Frederico Steven Kwok
Antri 2 = Daffa Abdul Mufid
Antri 1 = Anton Sugiarti
Antrian Penuh...


Tekan 1 Untuk Lanjut Program
```

7. **Ketik 5 jika Ingin mengakhiri program**

```
Terima Kasih...
```

3. **Screenshot Waktu Pengerjaan**

```
    23.03
27/05/2025    5
```