

```
#include <iostream>
```

```
#include <stdio.h>
```

```
#include <conio.h>
```

```
#include <cstdio>
```

```
#include <stdlib.h>
```

```
#define MAX 8
```

```
using namespace std;
```

```
typedef struct {
```

```
int data [MAX];
```

```
int head;
```

```
int tail;
```

```
} queue;
```

```
queue antrian;
```

```
void create()
```

```
{
```

```
    antrian.head=antrian.tail=-1;
```

```
}
```

```
int IsEmpty()
```

```
{
```

```
    if (antrian.tail== -1)
```

```
        return 1;
```

```
        else  
            return 0;  
    }
```

```
int IsFull()  
{  
    if (antrian.tail==MAX-1)  
        return 1;  
    else  
        return 0;  
}
```

```
void enqueue (int data)  
{  
    if (IsEmpty()==1){  
        antrian.head=antrian.tail=0;  
        antrian.data[antrian.tail]=data;  
        void tampil();  
        {  
            if (IsEmpty()==0){  
                for (int i=antrian.head;i<=antrian.tail;i++){  
                    }  
                } else printf("data kosong!\n"); }  
        }  
    }  
    else  
        if (IsFull()==0){  
            antrian.tail++;
```

```

        antrian.data[antrian.tail]=data;
    }
}

```

```

int Dequeue (){
    int i;
    int e =antrian.data[antrian.head];
    for (i=antrian.head;i<=antrian.tail-1;i++){
        antrian.data[i] = antrian.data[i+1];
    }
    antrian.tail--;
    return e;
}

```

```

void clear (){
    antrian.head=antrian.tail=-1;
    cout<<"data clear";
}

```

```

void tampil() {
    int jum=0;
    if(IsEmpty()==0){
        for(int i=antrian.head;i<=antrian.tail;i++){
            printf("data yang dimasukkan = %d \n",antrian.data[i]);

```

```

        jum=jum+antrian.data[i];
    }
} else
    cout<<"data kosong\n";
}

```

```

void banyakDat() {
int jum=0;
    if(IsEmpty()==0){
        for(int i=antrian.head;i<=antrian.tail;i++){
            jum += 1;
        }
        cout << jum;
    } else
        cout<<"data kosong\n";
}

```

```

void jumlah (){
int hasil=0;
for (int i=antrian.head;i<=antrian.tail;i++)
{
    hasil=hasil+antrian.data[i];
    cout<<"jumlah: "<<hasil<<endl;
}
}

```

```

void rata(){
float sama;

```

```

int bagi=antrian.tail+1;

int hasil=0;

for (int i=antrian.head;i<=antrian.tail;i++)
{
    hasil=hasil+antrian.data[i];

    sama=hasil/bagi;

    cout<<"rata-rata : "<<sama<<endl;
}
}

```

```

int main ()
{
    int pil;

    int masuk;

    create();

    do {

        cout<<"\n===== ";

        cout<<"\nMenu antrian\n";

        cout<<"1. Enqueue\n";

        cout<<"2. Dequeue\n";

        cout<<"3. Tampil\n";

        cout<<"4. Clear\n";

        cout<<"5. Banyak data\n";

        cout<<"6. Jumlah data\n";

        cout<<"7. Rata-rata\n";

        cout<<"8. Exit\n";

        cout<<"masukkan pilihan: "; cin>>pil;
    }
}

```

```
switch (pil)
{
case 1:

    cout<<"\nData = ";

    cin>>masuk;

    enqueue(masuk);

    break ;

case 2:

    cout<<"Elemen yang keluar : "<<Dequeue();

    break;

case 3:

    tampil();

    break;

case 4:

    clear();

    break;

case 5:

    banyakDat();

    break;

case 6:

    jumlah();

    break;

case 7:

    rata();

    break;
```

```
    }  
    }while(pil!=8);  
}
```