**Topik 5 Queue**

**Jumat**, 30 Oktober 2020

**Latihan 1 :**

**Kode program :**

****

****

****

****

****

****

**Output program :**

* Enqueue / masukkan nilai 8 (pilih 1)

****

* Cetak Kondisi Antrian (pilih 3)

****

* Dimasukkan nilai 5, 4, dan 9 (pilih 1)
* Cetak Kondisi Antrian (pilih 3)

****

* Dequeue/hapus data Antrian (pilih 2)

****

* Cetak Kondisi Antrian (pilih 3)



* Dimasukkan nilai 1, 2, 3, 4, 5, 6, dan 7 (pilih 1)
* Cetak Kondisi Antrian (pilih 3)

****

* Dequeue/hapus data Antrian (pilih 2)
* Cetak Kondisi Antrian (pilih 3)

****

**Tugas :**

Gambarkan kodisi antrian jika dilakukan proses berikut ini :

1. Enqueue 2
2. Enqueue 8, 3, 6, dan 9
3. dequeue
4. Enqueue 7, 5, 2, dan 4
5. Dequeue
6. Dequeue
7. Dequeue
8. Enqueue 1, 3, 6, dan 9
9. dequeue
10. dequeue

DIKUMPULKAN :

Nama File : **A12P99AlproXXXXXNama** (99 nomor tugas, XXXXX : 5 digit NIM terakhir)

Format file : PDF

Dikirim ke : suharnawi@dsn.dinus.ac.id

Dikumpulkan paling lambat 7 November 2020

Source code program

#include <iostream.h>

#include <conio.h>

#include <stdio.h>

#define MAX 10

int antrian[MAX];

int front = -1;

int rear = -1;

//cek apakah antrian penuh.........................................

bool isFull()

{

 if ((front == rear + 1) || (front == 0 && rear == MAX - 1)){

 return true;

 }

 else

 return false;

}

//cek apakah antrian kosong........................................

bool isEmpty()

{

 return front == -1;

}

//manambahkan data ke antrian......................................

void enqueue() {

 if (isFull())

 {

 cout << "\nAntrian penuh ! ";

 getch();

 }

 else

 {

 int xantrian;

 cout << "\nMasukkan antrian : ";cin >> xantrian;

 if (front == -1)

 front = 0;

 rear = (rear + 1) % MAX;

 antrian[rear] = xantrian;

 }

}

// mengambil data dari antrian.....................................

void dequeue()

{

 int xdequeue;

 if (isEmpty())

 {

 cout << "\nAntrian masih kosong ! ";

 }

 else

 {

 xdequeue = antrian[front];

 antrian[front] = 0;

 if (front == rear) {

 front = rear = -1;

 }

 else {

 front = (front + 1) % MAX;

 }

 cout << "\nMengambil antrian \"" << xdequeue << "\"";

 cout << endl;

 }

 getch();

}

//Menampilkan Queue

void printQueue() {

 if (isEmpty())

 {

 cout << "\nAntrian kosong ! ";

 }

 else {

 cout << "\n\nKondisi Antrian : \n\n";

 cout << "==== | ";

 for (int i = MAX-1; i >= 0; i--)

 {

 if (antrian[i] == 0)

 cout << " | ";

 else

 cout << antrian[i] << " | ";

 }

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

 cout << "Front = " << front << endl;

 cout << "Rear = " << rear << endl;

 cout << "\nEnter kembali ke Menu ";

 }

 getch();

}

//program utama ...........................................

void main()

{

 int pilih;

 do

 {

 //Tampilan menu....................................

 clrscr();

 cout << "----------------------------------\n"

 << " Menu Pilihan Circular Queue\n"

 << "----------------------------------\n"

 << " [1] Enqueue / Tambah Antrian \n"

 << " [2] Dequeue / Hapus antrian \n"

 << " [3] PrintDequeue / Cetak Antrian \n"

 << " [4] Keluar \n\n"

 << "----------------------------------\n"

 << "Masukkan pilihan : "; cin >> pilih;

 switch (pilih)

 {

 case 1:

 enqueue();

 break;

 case 2:

 dequeue();

 break;

 case 3:

 printQueue();

 break;

 default:

 cout << "Pilihan tidak tersedia ! ";

 break;

 }

 } while (pilih != 4);

}