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FDS Assignment 7

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#include<iostream>

using namespace std;

class queue

{

int q[5],f,r;

public :

queue()

{

f=-1;

r=-1;

}

int isfull();

int isempty();

void enq();

void display();

void dq();

};

void queue :: display()

{

int i;

for(i=f;i!=r;i=(i+1)%5)

{

cout<<q[i]<<" ";

}

cout<<q[i];

}

int queue::isfull()

{

if((f==0 && r==4) || (f==r+1))

{

return 1;

}

else{

return 0;

}

}

void queue::enq()

{

int x;

cout<<"Enter Value to enqueue ";

cin>>x;

if(f==-1 && r==-1)

{

f=(f+1)%5;

r=(r+1)%5;

q[r]=x;

}

else{

r=(r+1)%5;

q[r]=x;

}

}

int queue :: isempty()

{

if(f==-1 && r==-1)

{

return 1;

}

else

return 0;

}

void queue :: dq()

{

cout<<"deleted element = "<<q[f];

if(f==r)

{

f=-1;r=-1;

}

else

{f=(f+1)%5;

}

}

int main()

{

int ch;

queue q;

while(1)

{

cout<<"\nMenu"<<endl;

cout<<"Enter 1 for Enqueue "<<endl;

cout<<"Enter 2 for Display "<<endl;

cout<<"Enter 3 for Dequeue "<<endl;

cout<<"Enter 4 for Exit "<<endl;

cin>>ch;

switch(ch)

{

case 1 : if(q.isfull())

{

cout<<"Queue is full ";

}

else

{

q.enq();

}

break;

case 2 : if(q.isempty())

{

cout<<"Queue is empty ";

}

else

{

q.display();

}

break;

case 3 : if(q.isempty())

{

cout<<"Queue is empty ";

}

else

{

q.dq();

}

break;

case 4 : return 0;

}

}

}