//question 5

//In this problem you have to take an array of size 10 and

//write the Enqueue, Dequeue and Display functions for that and

//also take care of overflow and underflow conditions. All the work must be done in classes.

//i. Furthermore you must write isEmpty(), isFull() and status() function.

//ii. isEmpty() has return type of Boolean and check the underflow.

//iii. isFull() has return type of Boolean and check the overflow.

//iv. Status() tells the current available spaces in the stack.

#include<iostream>

using namespace std; //header files

const int MAX=10; //global variable

class Queue //name of class

{

private: //data member

int arr[MAX]; //variables

int s,e;

public:

Queue() //constrecture

{

arr[0]=NULL; //e satand for end,enqueue,inseertion,back,rear

s=-1,e=-1; //s satand for start,dequeue,deletion,front

}

//////////////////////////////////////////////

bool is\_empty() //empty function

{

if(e==-1)

return true;

else

return false;

}

/////////////////////////////////////

bool is\_full()

{

if(e==MAX) //e=10 //rear=10

return true;

else

return false;

}

//////////////////////////////////////

void status() //chaek status function

{

int c;

c=MAX-e;

cout<<"\ncurrent space in Queue is : "<<c-1<<endl;

}

//////////////////////////////////////

void enqueue(int var) //insertion function

{

if(is\_full())

cout<<"\nQueue is full \n";

else

arr[++e]=var;

cout<<"\nenQueue value is :"<<var<<endl;

}

/////////////////////////////////////////

int dequeue() //dequeue fuunctuion

{

if(is\_empty())

cout<<"\nqueue is empty\n";

else

return arr[e--];

for(int i=0;i<e;i++)

{

arr[i]=arr[i+1];

}

}

};

///////////////////////////////////////////////

int main() //main function

{

Queue s1,s2; //objects

cout<<"\n\t\ts1 object perform as Que : \n";

cout<<"\n\t\tenque to s1 Que : \n";

if(s1.is\_full())

cout<<"\nque is full \n";

else

{

//cout<<"yes! space are available in Que\n";

cout<<"\ncheck that how many space available at that momment : ";

s1.status();

s1.enqueue(2);

s1.enqueue(3);

s1.enqueue(4);

cout<<"\ncheck that how many space available at that momment : ";

s1.status();

s1.enqueue(5);

}

cout<<"\n\t\tnow deque from s1 Que : \n";

if(s1.is\_empty())

cout<<"Que is empty : ";

else

{

cout<<s1.dequeue()<<endl; //0 index

cout<<s1.dequeue()<<endl; //1 index

cout<<s1.dequeue()<<endl; //2 index

cout<<s1.dequeue()<<endl; //3 index

cout<<"\ncheck that how many space available at that momment : ";

s1.status();

}

system("pause");

return 0;

}