**queue-using-array.c**

//write a program to implement straight-line queue using array.

#include <stdio.h>

#define max 10

int queue[max], rear = -1, front = -1;

void enqueue(int data){

queue[++rear] = data;

if(front == -1){

front++;

}

}

int dequeue(){

return queue[front++];

}

void display(){

if(rear == front && front != max-1){

printf("Empty Queue.\n");

return;

}

int i = front;

while(i <= rear){

printf("%d",queue[i]);

i++;

if(i > rear){

break;

}

printf(" -> ");

}

printf("\n");

}

int isEmpty(){

return (rear == -1 || front == max);

}

int isFull(){

return rear >= max-1;

}

int len(){

if(rear == -1){

return 0;

}

return rear - front + 1;

}

void main(){

if(isEmpty()){

printf("The Queue is empty.\n");

}else{

printf("The Queue is not empty.\n");

}

printf("the length of the Queue is %d\n",len());

enqueue(10);

printf("the length of the Queue is %d\n",len());

enqueue(102);

enqueue(15);

enqueue(13);

enqueue(12);

display();

printf("the length of the Queue is %d\n",len());

if(isFull()){

printf("The Queue is Full.\n");

}else{

printf("The Queue is not Full.\n");

}

printf("Removed %d\n",dequeue());

printf("Removed %d\n",dequeue());

printf("Removed %d\n",dequeue());

display();

}

**OUTPUT**

PS S:\WorkSpace\CollegeWork\DataStructure\Temp> gcc .\queue-using-array.c

PS S:\WorkSpace\CollegeWork\DataStructure\Temp> ./a

The Queue is empty.

the length of the Queue is 0

the length of the Queue is 1

10 -> 102 -> 15 -> 13 -> 12

the length of the Queue is 5

The Queue is not Full.

Removed 10

Removed 102

Removed 15

13 -> 12

PS S:\WorkSpace\CollegeWork\DataStructure\Temp>