**Mechi Multiple Campus**

(Tribhuvan University)

Bhadrapur, Jhapa



**Lab Report of**

**Data Structures and Algorithm (CACS-201)**

**Implementation of Circular Queue**

Faculty of Humanities & Social Sciences

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**Program Code**

#include<stdio.h>

void enqueue();

void dequeue();

void display();

int queue[3],front=-1,rear=-1,max=3;

void main(){

top:

printf("\n\n\*\*\*Option\*\*\*\n1.Insert Data in Queue\n2.Remove Data From Queue\n3.Display Data of Queue\n\nSelect Your Option(1,2,3): ");

int n;

scanf("%d",&n);

switch(n){

case 1:

enqueue();

goto top;

case 2:

dequeue();

goto top;

case 3:

display();

goto top;

case 4:

exit(0);

default:

printf("Wrong Entry.");

goto top;

}

}

void enqueue(){

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

printf("OVERFLOW");

else {

if(rear==-1)

rear=front=0;

else if(rear==(max-1))

rear=0;

else

rear++;

printf("Enter a Data: ");

scanf("%d",&queue[rear]);

printf("%d inserted in Queue.",queue[rear]);

}

}

void dequeue(){

if(rear==-1)

printf("UNDERFLOW");

else{

printf("%d Deleted from Queue.",queue[front]);

if(front==rear)

front=rear=-1;

else

if(front==(max-1))

front=0;

else

front++;

}

}

void display(){

if(rear==-1)

printf("Queue is Empty.");

else if (rear>=front){

int i;

printf("Data on Queue: ");

for(i=front;i<=rear;i++)

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

}

else{

int i,j;

printf("Data on Queue: ");

for(i=front;i<max;i++)

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

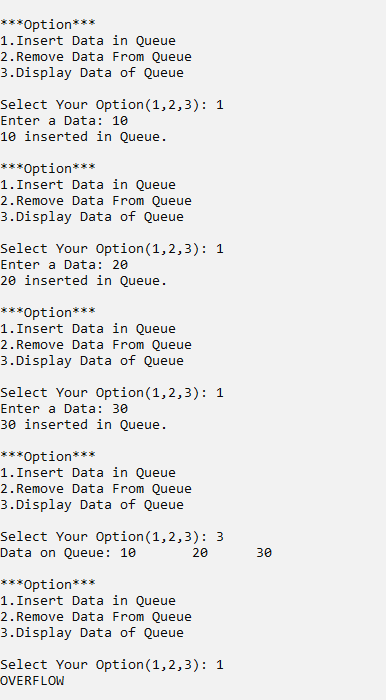
for(j=0;j<=rear;j++)

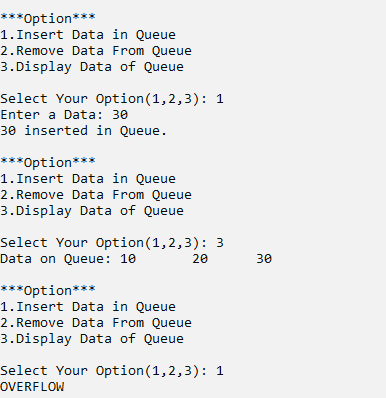
printf("%d\t",queue[j]);

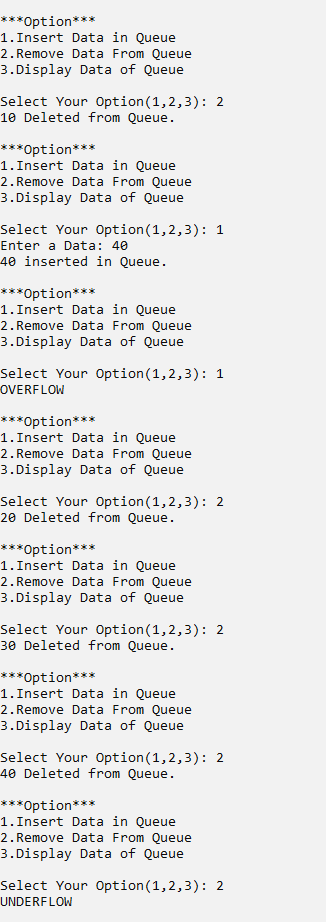
}

}

**Output of the Program**

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