**Assignment Day 7**

**Question 1**

Write a program implementing insert, delete and display operation of Circular Queue.

**Answer:**

 /\*static circular queue\*/

#include <stdio.h>

#define size 5

void insertq(int[], int);

void deleteq(int[]);

void display(int[]);

int front = - 1;

int rear = - 1;

int main()

{

int n, ch;

int queue[size];

do

{

printf("\n\n Circular Queue:\n1. Insert \n2. Delete\n3. Display\n0. Exit"); printf("\nEnter Choice 0-3? : ");

scanf("%d", &ch);

switch (ch)

{

case 1:

printf("\nEnter number: ");

scanf("%d", &n);

insertq(queue, n);

break;

case 2:

deleteq(queue);

break;

case 3:

display(queue);

break;

}

}while (ch != 0);

}

void insertq(int queue[], int item)

{

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

{

printf("queue is full");

return;

}

else if (rear == - 1)

{

rear++;

front++;

}

else if (rear == size - 1 && front > 0)

{

rear = 0;

}

else

{

rear++;

}

queue[rear] = item;

}

void display(int queue[])

{

int i;

printf("\n");

if (front > rear)

{

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

{

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

}

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

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

}

else

{

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

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

}

}

void deleteq(int queue[])

{

if (front == - 1)

{

printf("Queue is empty ");

}

else if (front == rear)

{

printf("\n %d deleted", queue[front]);

front = - 1; rear = - 1;

}

else

{

printf("\n %d deleted", queue[front]);

front++;

}

}