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IBM17CS071

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DS Lab

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\nCircular 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:

```
displayq (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 = 0;
```

```
}
```

```
else
```



```
1  
rear ++;  
}  
queue[rear] = item;  
}
```

```
void display(int queue[])  
{
```

```
    int i;  
    printf("\n");  
    if (front > rear)
```

```
    {  
        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++;
}
}
```