

LAB PROGRAM - 4 (PRACTICE)

- 4) Simulate the working of a double ended queue which is input restricted and output restricted.

Code: #include <stdio.h>

#define qsize 5

int f=0, r=-1, ch;

int item, q[10];

int isFull()

{

return (r == qsize - 1) ? 1 : 0

}

int isEmpty()

{

return (f > r) ? 1 : 0;

}

void insertRear()

{

if (isFull())

{

printf("Queue is empty\n");

return;

}

printf("item deleted is %d\n", q[f]);

if (f > r)

{

f = 0

r = -1;

}

}

```
void insert-front()
```

```
{
    if (f != 0)
    {
        f = f - 1;
        q[f] = item;
        return;
    }
}
```

```
else
```

```
printf("insertion is not possible\n");
}
```

```
void delete-rear()
```

```
{
    if (isempty())
    {
        printf("queue is empty\n");
        return;
    }
}
```

```
printf("item deleted is %d\n", q[r--]);
```

```
if (f > r)
```

```
{
```

```
f = 0;
```

```
r = -1;
```

```
}}
```

```
void display()
```

```
{ int i;
```

```
if (isempty())
```

```
{ printf("queue empty\n");
```

```
return;
```

```
}
```

```
for (i = f; i <= r; i++)
```

```
printf("%d\n", q[i]);
```



```
void main()
```

```
{
```

```
for(i=1;
```

```
{
```

```
printf("\n 1. insert rear\n 2. insert front\n 3. delete rear\n 4. delete front\n 5. display\n 6. exit\n");
```

```
printf("Enter choice\n");
```

```
scanf("%d", &ch);
```

```
switch(ch)
```

```
{
```

```
case 1: printf("enter the item\n");
```

```
scanf("%d", &item);
```

```
insert-rear();
```

```
break;
```

```
case 2: printf("enter the item\n");
```

```
scanf("%d", &item);
```

```
insert-front();
```

```
break;
```

```
case 3: delete-rear();
```

```
break;
```

```
case 4: delete-front();
```

```
break;
```

```
case 5: display();
```

```
break;
```

```
default: exit(0);
```

```
}
```

```
}
```

```
}
```