

LAB PROGRAM4 (28/10/2020)

```
#include <stdio.h>
```

```
#include <conio.h>
```

```
#include <stdlib.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 insert_rear(){
```

```
    if (isfull()){
```

```
        printf("QUEUE OVERFLOW\n");
```

```
    return;
```

```
}
```

```
r = r+1;  
q[r]=item;  
}
```

```
void delete_front(){  
    if(isempty()){  
        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 if((f==0)&&(r== -1)){  
        q[++(r)]=item;  
        return;  
    }
```

```
}  
else  
printf("insertion 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]);  
}
```

```
int main(){  
for(;;){  
printf("1.insert_rear\n2.insert_front\n3.delete_rear\n4.delete_front  
\n5.display\n6.exit\n");  
printf("enter the 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);
```

```
}
```

```
}
```

```
return 0;
```

```
}
```

OUTPUT

C:\Windows\SYSTEM32\cmd.e

```
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter the choice
1
enter the item
10
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter the choice
1
enter the item
20
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter the choice
1
enter the item
30
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter the choice
1
enter the item
40
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter the choice
1
enter the item
50
```

C:\Windows\SYSTEM32\cmd.exe

```
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter the choice
5
10
20
30
40
50
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter the choice
4
item deleted is 10
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter the choice
5
20
30
40
50
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter the choice
2
enter the item
10
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
```

C:\Windows\SYSTEM32\cmd.exe

enter the choice

5

10

20

30

40

50

1.insert_rear

2.insert_front

3.delete_rear

4.delete_front

5.display

6.exit

enter the choice

3

item deleted is 50

1.insert_rear

2.insert_front

3.delete_rear

4.delete_front

5.display

6.exit

enter the choice

3

item deleted is 40

1.insert_rear

2.insert_front

3.delete_rear

4.delete_front

5.display

6.exit

enter the choice

3

item deleted is 30

1.insert_rear

2.insert_front

3.delete_rear

4.delete_front

5.display

6.exit

enter the choice

3

item deleted is 20

1.insert_rear

2.insert_front

3.delete_rear

4.delete_front

5.display

6.exit

enter the choice

C:\Windows\SYSTEM32\cmd.exe

```
3
item deleted is 10
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter the choice
3
queue is empty
1.insert_rear
2.insert_front
3.delete_rear
4.delete_front
5.display
6.exit
enter the choice
```