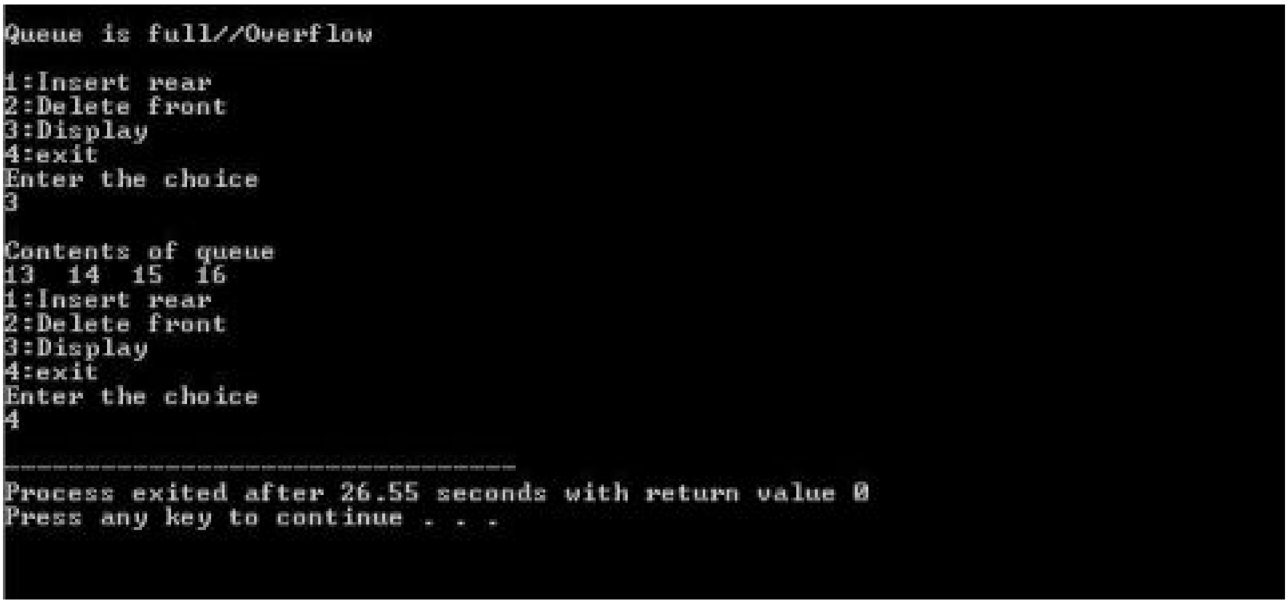
Week 4

1)QUEUE using Array

```
#include<stdio.h>

#include<stdlib.h>

#define QUE_SIZE 5

int item,front=0,rear=-1,q[10];

void insertrear()

{

        if(rear==QUE_SIZE-1)

         {

         printf("\nQueue is full//Overflow\n");

        return;

         }

        printf("\nEnter the item to be

        inserted\n"); scanf("%d",&item);

        rear=rear+1;

        q[rear]=item;

}

int deletefront()

{

 if (front>rear)

         {

         front=0;

         rear=-1;

         return -1;

         }
        return q[front++];
}
void displayQ()
{
        int i;
        if (front>rear)
        {
                printf("\nQueue is empty\n");
                return;
        }
        printf("\nContents of queue\n");
        for(i=front;i<=rear;i++)
        {
                printf("%d ",q[i]);
        }
}
int main()
{
        int choice;
        for(;;)
        {
                printf("\n1:Insert rear\n2:Delete front\n3:Display\n4:exit\n");
                printf("Enter the choice\n");
                scanf("%d",&choice);
                switch(choice)
                {
                        case 1: insertrear ();
```

```
                                        break;

                    case 2: item=deletefront();
                                        if(item==-1)

                                        printf("\nQueue is empty//Underflow\n");

                                        else

                                        printf("Item deleted=%d\n",item);

                                        break;

                    case 3: displayQ();

                              break;

                    default:exit (0);



          }



     }

}
```



```
Queue is full//Overflow

1:Insert rear
2:Delete front
3:Display
4:exit
Enter the choice
3

Contents of queue
13  14  15  16
1:Insert rear
2:Delete front
3:Display
4:exit
Enter the choice
4

--------------------------------
Process exited after 26.55 seconds with return value 0
Press any key to continue . . .
```

2) CQUEUE Using Array

```
#include<stdio.h>

#include<stdlib.h>

#include<process.h>

#define que_size 5
```

```
int item,front=0,rear=-1,q[que_size],count=0;
void insertrear()
 {
 if(count==que_size)
  {
 printf("\nQueue is full//Overflow\n");
 return;
  }
 printf("\nEnter the item to be inserted: ");
  scanf("%d",&item);
 rear=(rear+1)%que_size;
 q[rear]=item;
 count++;
 }
int deletefront()
 {
 if(count==0) return -1;
 item = q[front];
 front=(front+1)%que_size;
 count=count-1;
 return item;
 }
void displayq()
 {
 int i,f;
 if(count==0)
  {
```

```
 printf("\nQueue is empty\n");
return;
  }
 f=front;
 printf("\nContents of queue
 \n"); for(i=0;i<count;i++)
  {
 printf("%d\n",q[f]);
 f=(f+1)%que_size;
  }
 }
void main()
 {
 int choice;
 for(;;)
  {
 printf("\n1.Insert rear \n2.Delete front \n3.Display \n4.Exit \n");
printf("Enter the choice : ");
 scanf("%d",&choice);
 switch(choice)
 {
 case 1:insertrear();
 break;
 case 2:item=deletefront();
 if(item==-1)
 printf("\nQueue is empty//Underflow\n");
 else
 printf("Item deleted is: %d \n",item);
 break;
         case 3:displayq();
 break;
 default:exit(0);
 }
  }


 }
```