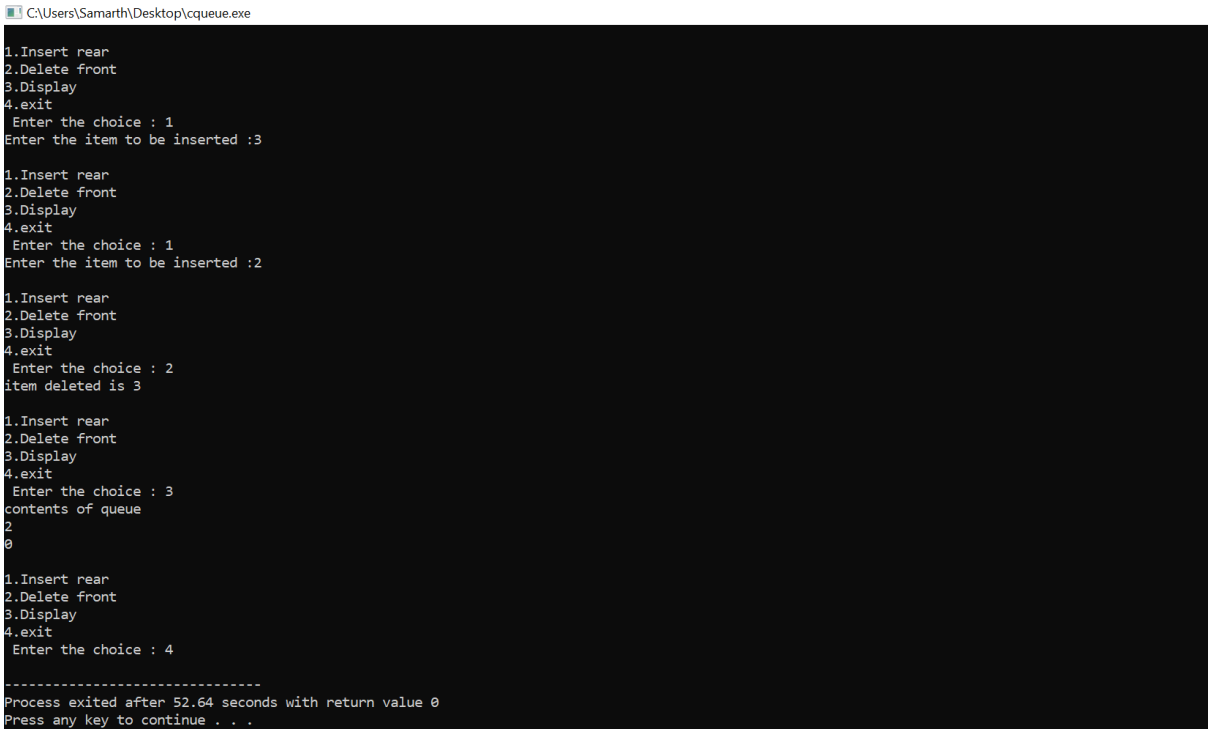
// Circular queue

```
#include<stdio.h>
#include<stdlib.h>
#include<process.h>
#define que_size 3
int item,front=0,rear=-1,q[que_size],count=0;
void insertrear()
{
	if(count==que_size)
	{
		printf("queue overflow");
		return;
	}
	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("queue is empty");
                return;
        }
        f=front;
        printf("contents 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:printf("Enter the item to be inserted :");
                            scanf("%d",&item);
                            insertrear();
                            break;
                        case 2:item=deletefront();
                                if(item==-1)
                                printf("queue is empty\n");
                                else
                                printf("item deleted is %d \n",item);
                                break;
```

```
                case 3:displayq();
                                break;
                default:exit(0);
              }
        }
        getch();
}
```



//LINEAR QUEUE

```
#include<stdio.h>
#include<stdlib.h>
#define QUE_SIZE 3
int item,front=0,rear=-1,q[10];
void insertrear()
{if(rear==QUE_SIZE-1)
{
        printf("queue overflow\n");
        return;
```

```
}
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("queue is empty\n");
        return;
}
printf("contents of queue\n");
for(i=front;i<=rear;i++)
{
        printf("%d\n",q[i]);
}}
int main()
{
        int choice;
        for(;;)
        {
                printf("1:insertrear 2:deletefront 3:display 4:exit\n");
                printf("enter the choice\n");
                scanf("%d",&choice);
```

```
        switch(choice)
        {
                case 1:printf("enter the item to be inserted\n");
                scanf("%d",&item);
                insertrear ();
                break;
                case 2:item=deletefront();
                if(item==-1)
                printf("queue is empty\n");
                else
                printf("item deleted=%d\n",item);
                break;
                case 3:displayQ();
                break;
                default:exit (0);
        }
}
```