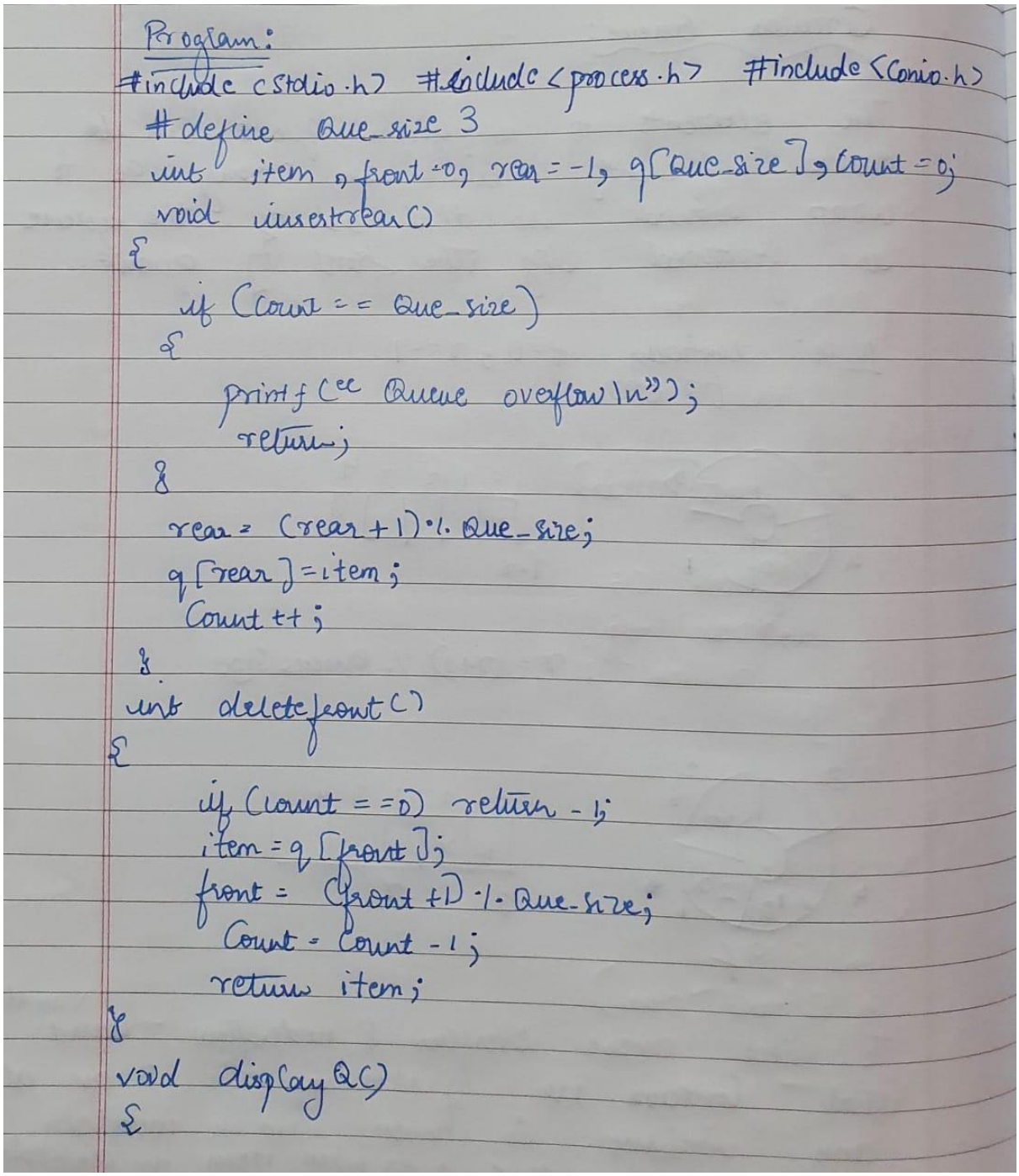
//LINEAR QUEUE

Queue program

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

```
printf("Contents of Queue \n");
for(i=front ; i<=rear ; i++)
{
    printf("%d \n", q[i]);
}
}
void main()
{
    int choice;
    clrscr();
    for(;;)
    {
      printf("\n1:insert rear \n2:delete front \n3:display
          \n4:exit\n");
      printf("\n Enter the choice \n");
      scanf("%d", &choice);
      switch(choice)
      {
        Case 1: printf("\n enter the item to be inserted \n");
                scanf("%d", &item);
                insertrear();
                break;
        Case 2: item = deletefront();
                if(item == -1)
                  printf("\n Queue is empty");
                else
                printf("\n item deleted = %d \n", item);
                break;
                Case 3: displayQ();
                break;
                default: exit(0);
      }
    }
}
```

// CIRCULAR QUEUE



```
Program:
#include <stdio.h>  #include <process.h>  #include <conio.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\n");
    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 display Q()
{
```

```
int i,f;
if (count == 0)
{
    printf("Queue is empty\n");
    return;
}
f= front;
printf("Contents of Queue \n");
for (i=1;i<= count; i++)
  {
     printf("%d\n", q[f]);
     f = (f+1) % QUE_size;
  }
}
void main()
{
    int choice;
    clrscr();
    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: 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("\n item deleted = %d\n", item);
        break;
Case 3: display Q();
        break;
default: exit(0);
}
}
getch();
}
```