**DS LAB-6**

**Q.)WRITE A PROGRAM TO IMPLEMENT THE PRIORITY QUEUE.**

#include<stdio.h>

#include<stdlib.h>

#define size 5

int pri\_Q[size];

int rear=-1;

int front=-1;

void Display();

void check(int);

void Priority\_insertion(int);

void Priority\_deletion(int);

void main()

{

int choice,ch;

while(1)

{

printf("1.To Insert\n");

printf("2.To Delete\n");

printf("3.To Display\n");

printf("4.Exit \n");

printf("Enter your choice\n");

scanf("%d",&choice);

switch(choice)

{

case 1:printf("Enter the value to be inserted\n");

scanf("%d",&ch);

Priority\_insertion(ch);

break;

case 2:printf("Enter the value to be deleted\n");

scanf("%d",&ch);

Priority\_deletion(ch);

break;

case 3:Display();

break;

case 4:exit(1);

break;

default:printf("Invalid input\n");

}

}

}

void Priority\_insertion(int item)

{

if(rear>=(size-1))

{

printf("Queue Overflow\n");

return;

}

else if(front ==-1 && rear==-1)

{

front++;

rear++;

pri\_Q[rear]=item;

return;

}

else

check(item);

rear++;

}

void check(int item)

{

int i,j;

for(i=0;i<=rear;i++)

{

if(item>=pri\_Q[i])

{

for(j=rear+1;j>i;j--)

{

pri\_Q[j]=pri\_Q[j-1];

}

pri\_Q[i]=item;

return;

}

}

pri\_Q[i]=item;

}

void Priority\_deletion(int item)

{

int i;

if(front==-1 && rear==-1)

{

printf("Queue underflow\n");

return;

}

else

{

for(i=0;i<=rear;i++)

{

if(item==pri\_Q[i])

{

while(i<rear)

{

pri\_Q[i]=pri\_Q[i+1];

i++;

}

pri\_Q[i]=-99;

rear--;

if(rear==-1)

front=-1;;

return;

}

}

printf("%d element to be deleted not found",item);

}

}

void Display()

{

if(front==-1 && rear==-1)

printf("Queue is Empty\n");

else

{

printf("Queue elements:\n");

while(front<=rear)

{

printf("%d",pri\_Q[front]);

printf("\n");

front++;

}

front=0;

}

}

**OUTPUT:**





