Name : Rajkumar B L
Reg.No : 2047120
Course : MCS 271 DS (Lab Test 04)

## Code:

```c
/**********************
 * Name : Rajkumar B L
 * Reg  : 2047120
 * Lab  : Test 04
 * ********************/
#include <stdio.h>
#include <stdlib.h>
#include <malloc.h>

void insert();
void del();
void display();
void displaymax();
void addpublc();

struct node
{
    int noOfPublc;
    int empid;
    struct node *next;
} *start = NULL, *q, *temp, *new;

typedef struct node N;
int main()
{
    int ch;
    printf("\n*************************\n*  Name : Rajkumar B L  *\n*  Reg  : 2047120       *\n*  La
b  : Test 04       *\n*************************\n");

    do
    {
        printf("\n========================\n\tMenu\n========================\n");
        printf("1. Insert Employee\n");
        printf("2. Delete Employee\n");
        printf("3. Display Max Employee\n");
        printf("4. Display All Employees\n");
        printf("5. Add Publication\n");
        printf("6. Exit\n");
        printf("========================\n");
        printf("Enter your choice: ");
        scanf("%d", &ch);
        switch (ch)
```

```
        {
        case 1:
            insert();
            break;
        case 2:
            del();
            break;
        case 3:
            displaymax();
            break;
        case 4:
            display();
            break;
        case 5:
            addpublc();
            break;
        case 6:
            printf("Bye!\n\n");
            exit(0);
        default:
            printf("Invalid Input!\n");
        }
    } while (ch != 6);
}
void insert()
{
    int item, itprio;
    new = (N *)malloc(sizeof(N));
    printf("Enter the Employee Id : ");
    scanf("%d", &item);
    printf("Enter no of publications : ");
    scanf("%d", &itprio);
    new->empid = item;
    new->noOfPublc = itprio;
    new->next = NULL;
    if (start == NULL)
    {
        start = new;
    }
    else if (start != NULL && itprio <= start->noOfPublc)
    {
        new->next = start;
        start = new;
    }
    else
    {
        q = start;
        while (q->next != NULL && q->next->noOfPublc <= itprio)
        {
            q = q->next;
        }
        new->next = q->next;
```

```
        q->next = new;
    }
    printf("Empoloyee added successfully\n");
}

void del()
{
    if (start == NULL)
    {
        printf("\nQueue Underflow\n");
    }
    else
    {
        new = start;
        printf("\nDeleted Employee Id is %d\n", new->empid);
        start = start->next;
    }
}

void display()
{
    temp = start;
    if (start == NULL)
        printf("Queue is empty\n");
    else
    {

        if (temp != NULL)
            printf("\n-------------------------\n  The Employee Queue\n-------------------------
\n");
            for (temp = start; temp != NULL; temp = temp->next)
            {
                printf("\nEmployee Id : %d \nNo of Publications : %d\n", temp->empid, temp-
>noOfPublc);
            }
            printf("\n-------------------------\n");
    }
}

void displaymax()
{
    int maxempid = 0;
    int maxpubl = 0;
    temp = start;
    if (start == NULL)
        printf("Queue is empty\n");
    else
    {
        if (temp != NULL)
        {
            printf("\n-------------------------\n Employee with max publc\n-------------------------
\n");
```

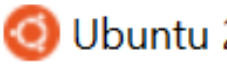
```
            temp = start;
            maxempid = temp->empid;
            maxpubl = temp->noOfPublc;
            for (temp = start; temp != NULL; temp = temp->next)
            {
                if (maxpubl <= temp->noOfPublc)
                {
                    maxempid = temp->empid;
                    maxpubl = temp->noOfPublc;
                }
            }
            printf("\nEmployee Id : %d \nNo of Publications : %d\n", maxempid, maxpubl);
            printf("\n-------------------------\n");
        }  }
}

void addpublc()
{
    temp = start;
    if (start == NULL)
    {
        printf("\nQueue Underflow\n");
    }
    else
    {
        int item, itprio, fnd;
        fnd=0;
        printf("Enter the Employee Id : ");
        scanf("%d", &item);
        for (temp = start; temp != NULL; temp = temp->next)
        {
            if (item == temp->empid)
            {
                fnd=1;
                printf("Enter no of publications to add : ");
                scanf("%d", &itprio);
                temp->noOfPublc = temp->noOfPublc + itprio;
            }
        }

        if(fnd<1)
        {
            printf("Employee Id not Found!\nPlease try again.\n");
        }
        else
        {
            printf("Publications added successfully\n");
        }
    }
}
```

# Output:

## 1. Creating Priority Queue




```
kumarraj@kumarraj:~/MCS_271/LabTest/LT04$ gcc lt4.c
kumarraj@kumarraj:~/MCS_271/LabTest/LT04$ ./a.out

**************************
*  Name : Rajkumar B L   *
*  Reg  : 2047120        *
*  Lab  : Test 04        *
**************************

=========================
        Menu
=========================
1. Insert Employee
2. Delete Employee
3. Display Max Employee
4. Display All Employees
5. Add Publication
6. Exit
=========================
Enter your choice: 1
Enter the Employee Id : 01
Enter no of publications : 03
Empoloyee added successfully
```

## 2. Adding more employees to the queue

```
==========================
        Menu
==========================
1. Insert Employee
2. Delete Employee
3. Display Max Employee
4. Display All Employees
5. Add Publication
6. Exit
==========================
Enter your choice: 1
Enter the Employee Id : 02
Enter no of publications : 1
Empoloyee added successfully


==========================
        Menu
==========================
1. Insert Employee
2. Delete Employee
3. Display Max Employee
4. Display All Employees
5. Add Publication
6. Exit
==========================
Enter your choice: 1
Enter the Employee Id : 03
Enter no of publications : 05
Empoloyee added successfully
```

```
==========================
        Menu
==========================
1. Insert Employee
2. Delete Employee
3. Display Max Employee
4. Display All Employees
5. Add Publication
6. Exit
==========================
Enter your choice: 1
Enter the Employee Id : 04
Enter no of publications : 10
Empoloyee added successfully

==========================
        Menu
==========================
1. Insert Employee
2. Delete Employee
3. Display Max Employee
4. Display All Employees
5. Add Publication
6. Exit
==========================
Enter your choice: 1
Enter the Employee Id : 05
Enter no of publications : 07
Empoloyee added successfully
```

## 3. Display All Employees

```
==========================
        Menu
==========================
1. Insert Employee
2. Delete Employee
3. Display Max Employee
4. Display All Employees
5. Add Publication
6. Exit
==========================
Enter your choice: 04

-------------------------
  The Employee Queue
-------------------------

Employee Id : 2
No of Publications : 1

Employee Id : 1
No of Publications : 3

Employee Id : 3
No of Publications : 5

Employee Id : 5
No of Publications : 7

Employee Id : 4
No of Publications : 10

-------------------------
```

**4. Employee with maximum publications**

```
============================
          Menu
============================
1. Insert Employee
2. Delete Employee
3. Display Max Employee
4. Display All Employees
5. Add Publication
6. Exit
============================
Enter your choice: 3

-------------------------
 Employee with max publc
-------------------------

Employee Id : 4
No of Publications : 10

-------------------------
```

## 5. Adding more publication to an employee

```
=========================
        Menu
=========================
1. Insert Employee
2. Delete Employee
3. Display Max Employee
4. Display All Employees
5. Add Publication
6. Exit
=========================
Enter your choice: 5
Enter the Employee Id : 3
Enter no of publications to add : 7
Publications added successfully

=========================
        Menu
=========================
1. Insert Employee
2. Delete Employee
3. Display Max Employee
4. Display All Employees
5. Add Publication
6. Exit
=========================
Enter your choice: 3

------------------------
 Employee with max publc
------------------------

Employee Id : 3
No of Publications : 12

------------------------
```

## Extra:

### 6. Deleting an Employee

```
==========================
        Menu
==========================
1. Insert Employee
2. Delete Employee
3. Display Max Employee
4. Display All Employees
5. Add Publication
6. Exit
==========================
Enter your choice: 2

Deleted Employee Id is 2

==========================
        Menu
==========================
1. Insert Employee
2. Delete Employee
3. Display Max Employee
4. Display All Employees
5. Add Publication
6. Exit
==========================
Enter your choice: 6
Bye!
```