SIDDHI SINGH
17BIT0028

ITE-1004
DATA STRUCTURES AND ALGORITHM
EXERCISE – 7

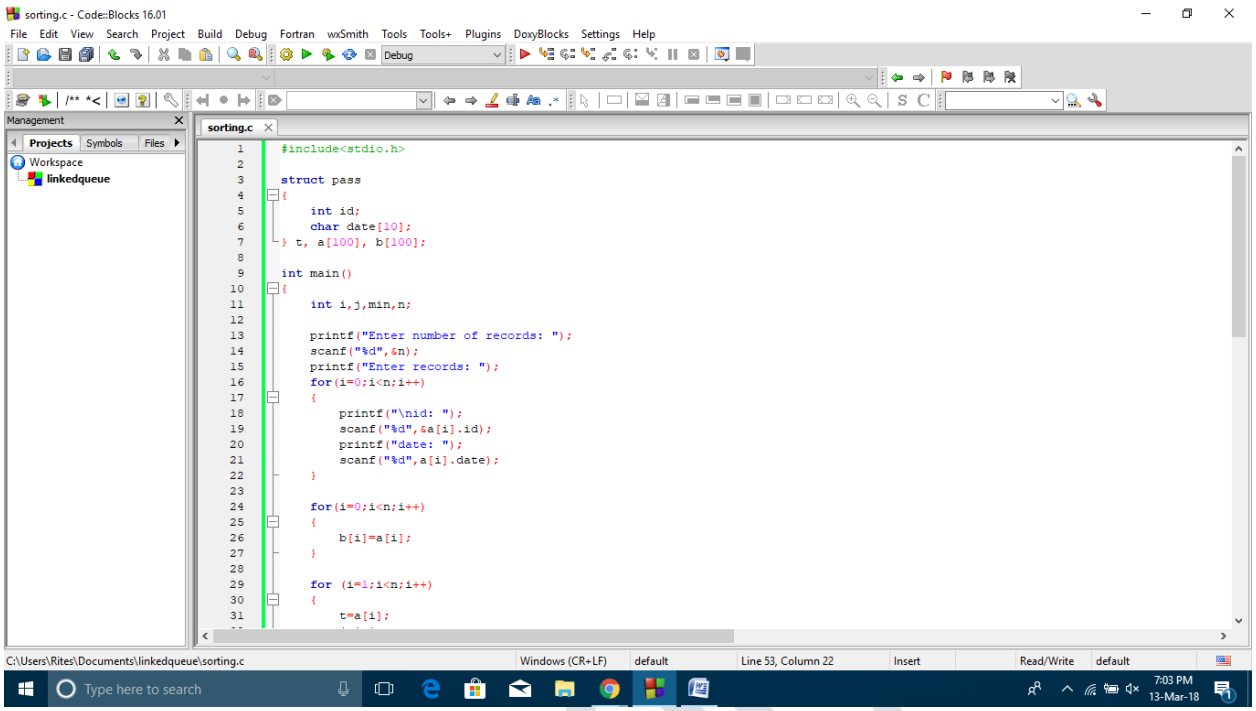
Assume in the Regional Passport Office, a multitude of applicants arrive each day for passport renewal. A list is maintained in the database to store the renewed passports arranged in the increased order of passport ID. The list already would contain there cords renewed till the previous day. Apply Insertion sort technique to place the current day's records in the list. Later the office personnel wish to sort the records based on the date of renewal so as to know the count of renewals done each day. Taking into consider ation the fact that each record has several fields (around 25 fields), follow Selection sort logic to implement the same.

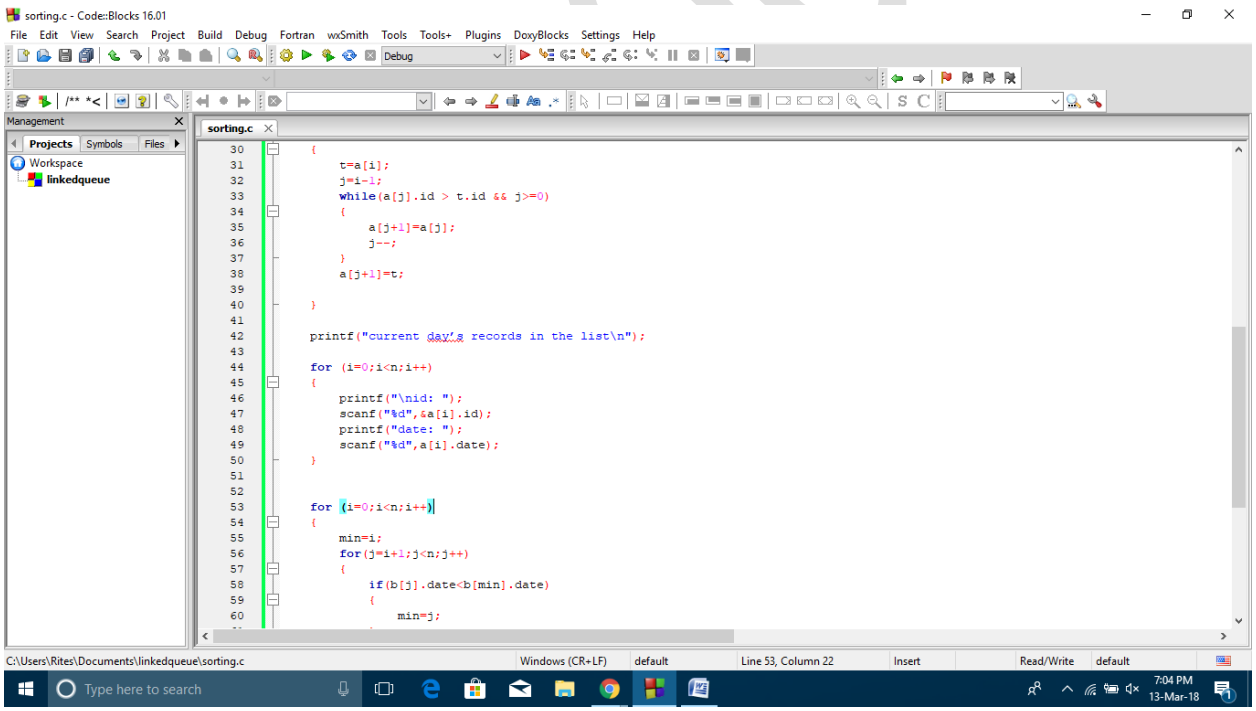
```
#include<stdio.h>

struct pass
{
    int id;
    char date[10];
} t, a[100], b[100];

int main()
{
      int i,j,min,n;

      printf("Enter number of records: ");
      scanf("%d",&n);
      printf("Enter records: ");
      for(i=0;i<n;i++)
    {
        printf("\nid: ");
        scanf("%d",&a[i].id);
        printf("date: ");
        scanf("%d",a[i].date);
    }

    for(i=0;i<n;i++)
    {
        b[i]=a[i];
    }

      for (i=1;i<n;i++)
      {
            t=a[i];
            j=i-1;
            while(a[j].id > t.id && j>=0)
            {
                  a[j+1]=a[j];
                  j--;
```

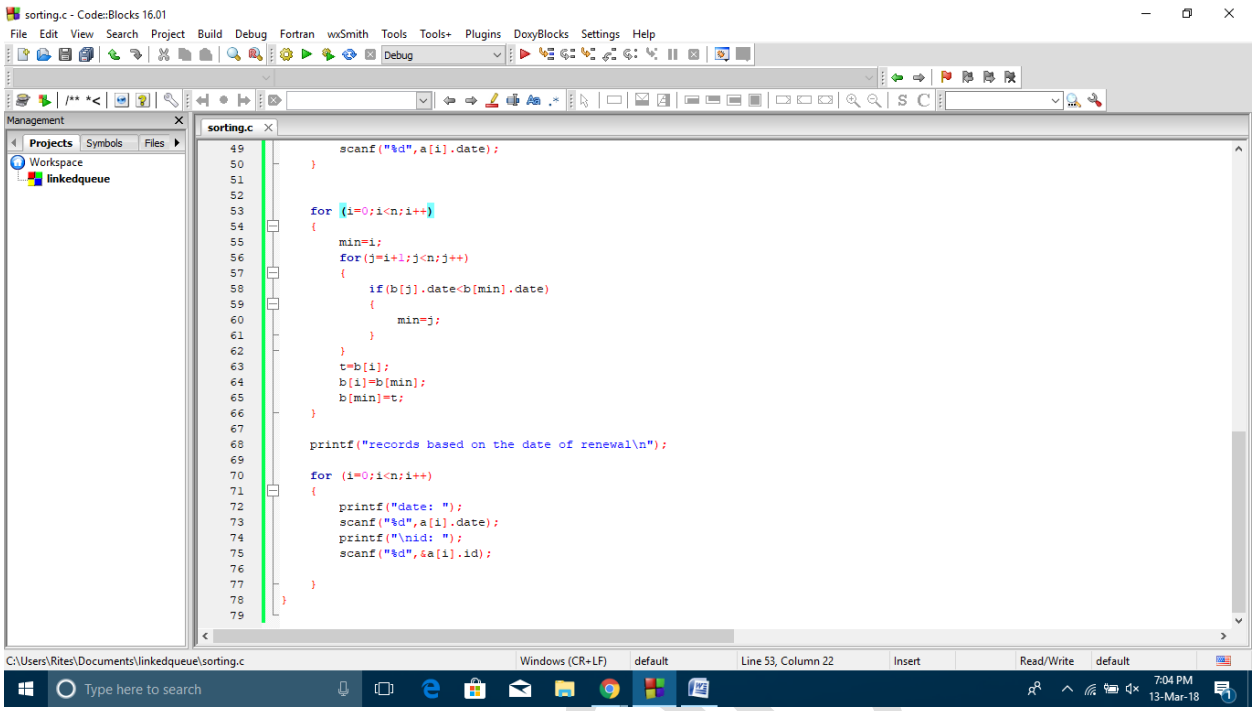
17BIT0028

```
            }
            a[j+1]=t;

        }

        printf("current day's records in the list\n");

        for (i=0;i<n;i++)
        {
            printf("\nid: ");
          scanf("%d",&a[i].id);
          printf("date: ");
          scanf("%d",a[i].date);
        }


        for (i=0;i<n;i++)
        {
              min=i;
              for(j=i+1;j<n;j++)
              {
                    if(b[j].date<b[min].date)
                    {
                          min=j;
                    }
              }
              t=b[i];
              b[i]=b[min];
              b[min]=t;
        }

        printf("records based on the date of renewal\n");

        for (i=0;i<n;i++)
        {
          printf("date: ");
          scanf("%d",a[i].date);
          printf("\nid: ");
          scanf("%d",&a[i].id);

        }
}
```

17BIT0028


sorting.c - Code::Blocks 16.01
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Debug
Management
Projects Symbols Files
Workspace
linkedqueue
sorting.c
#include<stdio.h>
struct pass
{
int id;
char date[10];
} t, a[100], b[100];
int main()
{
int i,j,min,n;
printf("Enter number of records: ");
scanf("%d",&n);
printf("Enter records: ");
for(i=0;i<n;i++)
{
printf("\nid: ");
scanf("%d",&a[i].id);
printf("date: ");
scanf("%d",a[i].date);
}
for(i=0;i<n;i++)
{
b[i]=a[i];
}
for (i=1;i<n;i++)
{
t=a[i];
C:\Users\Rites\Documents\linkedqueue\sorting.c
Windows (CR+LF)
default
Line 53, Column 22
Insert
Read/Write
default
Type here to search
7:03 PM
13-Mar-18


sorting.c - Code::Blocks 16.01
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Debug
Management
Projects Symbols Files
Workspace
linkedqueue
sorting.c
{
t=a[i];
j=i-1;
while(a[j].id > t.id && j>=0)
{
a[j+1]=a[j];
j--;
}
a[j+1]=t;
}
printf("current day's records in the list\n");
for (i=0;i<n;i++)
{
printf("\nid: ");
scanf("%d",&a[i].id);
printf("date: ");
scanf("%d",a[i].date);
}
for (i=0;i<n;i++)
{
min=i;
for(j=i+1;j<n;j++)
{
if(b[j].date<b[min].date)
{
min=j;
C:\Users\Rites\Documents\linkedqueue\sorting.c
Windows (CR+LF)
default
Line 53, Column 22
Insert
Read/Write
default
Type here to search
7:04 PM
13-Mar-18



OUTPUT

```
Enter number of records: 5
Enter records:
id: 1
date: 1022018

id: 2
date: 3022018

id: 3
date: 4022018

id: 4
date: 7022018

id: 5
date: 2022018

current day's records in the list

id: 1
date: 1022018
id: 2
date: 3022018
id: 3
date: 4022018
```

```
current day's records in the list

id: 1
date: 1022018
id: 2
date: 3022018
id: 3
date: 4022018
id: 4
date: 7022018
id: 5
date: 2022018
records based on the date of renewal

date: 1022018
id: 1
date: 2022018
id: 5
date: 3022018
id: 2
date: 4022018
id: 3
date: 7022018
id: 4

...Program finished with exit code 0
Press ENTER to exit console.
```

17BIT0