

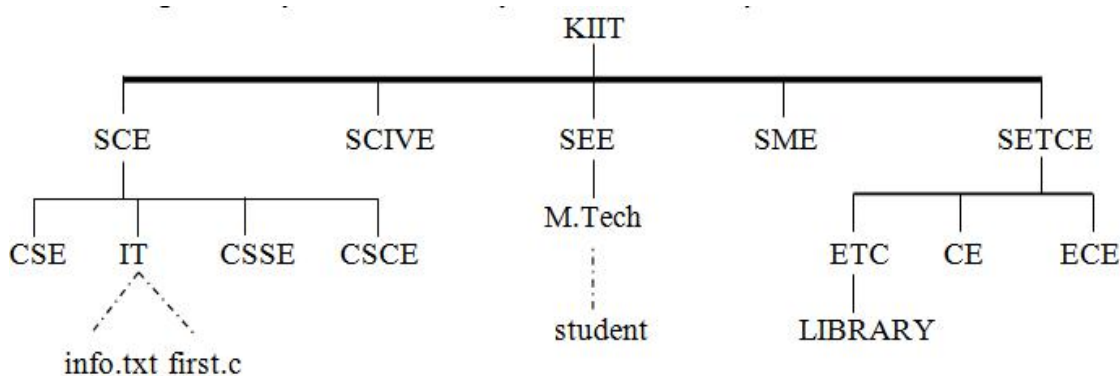
# CHAUDHARY HAMDAN

1905387

## OOP LAB-1

Date : 31-07-2020

**Question :** First create a sub-directory named as your roll number under your user directory. Then create the following directory structure under your rollno directory.



**N.B.** The names under solid lines are assumed as directories and dotted lines as file names.

### **Do the following operations**

- Create the file names under the directories as mentioned in the figure and write some relevant data into the files.
- Rename the file info.txt as itstudentsdata.txt.
- Copy the file first.c into the directory CE with the same name.
- Copy the file first.c into the directory SME with a new name as hello.c.
- Transfer the file student into the directory SCIVE and check whether transferred or not.

# Answer

```
File Edit View Search Terminal Help
kiit@kiit-VirtualBox:~$ cd KIIT
kiit@kiit-VirtualBox:~/KIIT$ mkdir SCE
kiit@kiit-VirtualBox:~/KIIT$ mkdir SCIVE
kiit@kiit-VirtualBox:~/KIIT$ mkdir SEE
kiit@kiit-VirtualBox:~/KIIT$ mkdir SME
kiit@kiit-VirtualBox:~/KIIT$ mkdir SETCE
kiit@kiit-VirtualBox:~/KIIT$ cd SEE
kiit@kiit-VirtualBox:~/KIIT/SEE$ mkdir M.Tech
kiit@kiit-VirtualBox:~/KIIT/SEE$ cd M.Tech
kiit@kiit-VirtualBox:~/KIIT/SEE/M.Tech$ gedit student
kiit@kiit-VirtualBox:~/KIIT/SEE/M.Tech$ cd
kiit@kiit-VirtualBox:~$ cd KIIT
kiit@kiit-VirtualBox:~/KIIT$ cd SETCE
kiit@kiit-VirtualBox:~/KIIT/SETCE$ mkdir ETC
kiit@kiit-VirtualBox:~/KIIT/SETCE$ mkdir CE
kiit@kiit-VirtualBox:~/KIIT/SETCE$ mkdir ECE
kiit@kiit-VirtualBox:~/KIIT/SETCE$ cd ETC
kiit@kiit-VirtualBox:~/KIIT/SETCE/ETC$ mkdir LIBRARY
kiit@kiit-VirtualBox:~/KIIT/SETCE/ETC$ cd
kiit@kiit-VirtualBox:~$ cd SCE
bash: cd: SCE: No such file or directory
kiit@kiit-VirtualBox:~$ cd KIIT
kiit@kiit-VirtualBox:~/KIIT$ cd SCE
kiit@kiit-VirtualBox:~/KIIT/SCE$ cd IT
bash: cd: IT: No such file or directory
kiit@kiit-VirtualBox:~/KIIT/SCE$ mkdir CSE
kiit@kiit-VirtualBox:~/KIIT/SCE$ mkdir IT
kiit@kiit-VirtualBox:~/KIIT/SCE$ mkdir CSSE
kiit@kiit-VirtualBox:~/KIIT/SCE$ mkdir CSCE
kiit@kiit-VirtualBox:~/KIIT/SCE$ cd IT
kiit@kiit-VirtualBox:~/KIIT/SCE/IT$ gedit info.txt
kiit@kiit-VirtualBox:~/KIIT/SCE/IT$ gedit info.txt
kiit@kiit-VirtualBox:~/KIIT/SCE/IT$ gedit first.c
kiit@kiit-VirtualBox:~/KIIT/SCE/IT$ gcc first.c
kiit@kiit-VirtualBox:~/KIIT/SCE/IT$ ./a.out
Hello Worldkiit@kiit-VirtualBox:~/KIIT/SCE/IT$ mv info.txt itstudentsdata.txt
kiit@kiit-VirtualBox:~/KIIT/SCE/IT$ ls
a.out first.c itstudentsdata.txt
kiit@kiit-VirtualBox:~/KIIT/SCE/IT$ cp first.c /KIIT/SETCE/CE
cp: cannot create regular file '/KIIT/SETCE/CE': No such file or directory
kiit@kiit-VirtualBox:~/KIIT/SCE/IT$ cp first.c /home/user/KIIT/SETCE/CE
cp: cannot create regular file '/home/user/KIIT/SETCE/CE': No such file or dire
kiit@kiit-VirtualBox:~/KIIT/SCE/IT$ cp first /home/user/KIIT/SETCE/CE
cp: cannot stat 'first': No such file or directory
kiit@kiit-VirtualBox:~/KIIT/SCE/IT$ cp first.c ~/KIIT/SETCE/CE
kiit@kiit-VirtualBox:~/KIIT/SCE/IT$ cp first.c ~/KIIT/SME hello.c
cp: target 'hello.c' is not a directory
kiit@kiit-VirtualBox:~/KIIT/SCE/IT$ cp first.c ~/KIIT/SME
kiit@kiit-VirtualBox:~/KIIT/SCE/IT$ cd ~/KIIT/SME
kiit@kiit-VirtualBox:~/KIIT/SME$ mv first.c hello.c
kiit@kiit-VirtualBox:~/KIIT/SME$ ls
hello.c
kiit@kiit-VirtualBox:~/KIIT/SME$
```

# Lab Manual Questions :

1. WAP to input name, roll number and marks in 5 subjects for a student, and display it.

```
#include <iostream>

using namespace std;

int main()

{

    string name;

    int roll;

    int marks[5];

    cout << "Enter Name then roll number and followed by 5 marks :-" << endl;

    cin >> name >> roll;

    for(int i=0;i<5;i++)

        cin >> marks[i];

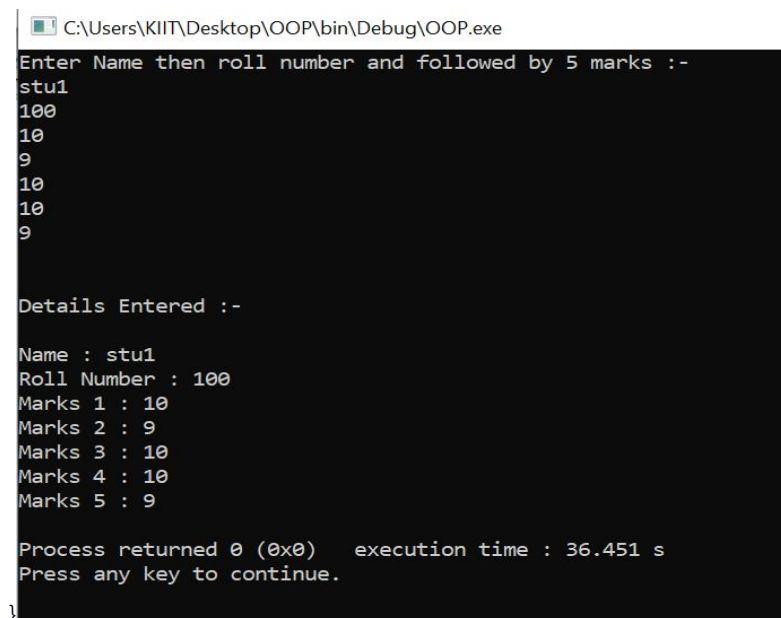
    cout << "\n\nDetails Entered :- \n\nName : " << name << "\nRoll Number : " << roll << endl;

    for(int i=0;i<5;i++)

        cout << "Marks " << i+1 << " : " << marks[i] << endl;

    return 0;

}
```



The screenshot shows a Windows command prompt window with the title bar "C:\Users\KIIT\Desktop\OOP\bin\Debug\OOP.exe". The program prompts the user to "Enter Name then roll number and followed by 5 marks :-". The user enters "stu1" for the name, "100" for the roll number, and then five marks: "10", "9", "10", "10", and "9". The program then displays the "Details Entered :-" section, showing the name as "stu1", the roll number as "100", and the marks for each of the five subjects: "Marks 1 : 10", "Marks 2 : 9", "Marks 3 : 10", "Marks 4 : 10", and "Marks 5 : 9". At the bottom, it shows "Process returned 0 (0x0) execution time : 36.451 s" and "Press any key to continue."

```
C:\Users\KIIT\Desktop\OOP\bin\Debug\OOP.exe
Enter Name then roll number and followed by 5 marks :-
stu1
100
10
9
10
10
9

Details Entered :-

Name : stu1
Roll Number : 100
Marks 1 : 10
Marks 2 : 9
Marks 3 : 10
Marks 4 : 10
Marks 5 : 9

Process returned 0 (0x0)   execution time : 36.451 s
Press any key to continue.
```

2. WAP to input name, roll number and marks in 5 subjects for n number of students. Write functions to:-
- Find total marks and percentage of all n students.
  - Display details of a student with a given roll number.
  - Display the details for all the students having percentage in a given range.
  - Sort the array in ascending order of marks.

```
#include <iostream>

using namespace std;

int main()
{
    int n,s;

    cout << "Enter number of students : ";

    cin >> n;

    string name[n+1];

    int roll[n+1];

    int marks[n+1][5];

    int total[n+1]={};

    float percent[n+1];

    for(int i=0;i<n;i++)
    {
        cout << "Enter Name then roll number and followed by 5 marks of student " << i+1 << " :-" << endl;

        cin >> name[i] >> roll[i];

        for(int ii=0;ii<5;ii++)
        {
            cin >> marks[i][ii];

            total[i] = total[i]+ marks[i][ii];

        }
    }
}
```

```

        percent[i]=total[i]*2;

    }

    cout << "Percentage :- " << endl;

    for(int i=0;i<n;i++)

        cout << "Student " << i+1 << " : " << percent[i] << endl;

    cout << "Enter a roll number to display details : ";

    cin >> s;

    for(int j=0;j<n;j++)

        if(s==roll[j])

        {

            cout << "\n\nDetails :- \n\nName : " << name[j] << "\nRoll Number : " << roll[j] << endl;

            for(int i=0;i<5;i++)

                cout << "Marks " << i+1 << " : " << marks[j][i] << endl;

            break;

        }

    int range1,range2;

    cout << "Enter the starting and ending range of percentage :- ";

    cin >> range1 >> range2;

    for(int i=0;i<n;i++)

    {

        if(percent[i]>=range1 && percent[i]<=range2)

        {

            cout << "\n\nDetails :- \n\nName : " << name[i] << "\nRoll Number : " << roll[i] << endl;

            for(int ii=0;ii<5;ii++)

                cout << "Marks " << ii+1 << " : " << marks[i][ii] << endl;

        }

    }

    cout << "\n\nAfter Sorting :-- " << endl;

    for(int i=0;i<n-1;i++)

    {

```

```
for(int j=i+1;j<n;j++)
{
    if(total[i]>total[j])
    {
        name[n] = name[i];

        name[i] = name[j];

        name[j] = name[n];

        roll[n] = roll[i];

        roll[i] = roll[j];

        roll[j] = roll[n];

        for(int ii=0;ii<5;ii++)
        {
            marks[n][ii] = marks[i][ii];

            marks[i][ii] = marks[j][ii];

            marks[j][ii] = marks[n][ii];

        }

        total[n] = total[i];

        total[i] = total[j];

        total[j] = total[n];

        percent[n] = percent[i];

        percent[i] = percent[j];

        percent[j] = percent[n];

    }
}
}
```

```

cout << "\n\nDetails :-\n" << endl;

for(int i=0;i<n;i++)
{
    cout << "\n\nName : " << name[i] << "\nRoll Number : " << roll[i] << endl;

    for(int ii=0;ii<5;ii++)
        cout << "Marks " << ii+1 << " : " << marks[i][ii] << endl;
}

return 0;
}

```

C:\Users\KIIT\Desktop\OOP\bin\Debug\OOP.exe

```

Enter number of students : 3
Enter Name then roll number and followed by 5 marks of student 1 :-
stu1
1
10 10 10 9 10
Enter Name then roll number and followed by 5 marks of student 2 :-
stu2
2
10 9 9 8 10
Enter Name then roll number and followed by 5 marks of student 3 :-
stu3
3
10 9 9 9 10
Percentage :-
Student 1 : 98
Student 2 : 92
Student 3 : 94
Enter a roll number to display details : 2

Details :-

Name : stu2
Roll Number : 2
Marks 1 : 10
Marks 2 : 9
Marks 3 : 9
Marks 4 : 8
Marks 5 : 10
Enter the starting and ending range of percentage :- 90 95

Details :-

Name : stu2
Roll Number : 2
Marks 1 : 10
Marks 2 : 9
Marks 3 : 9
Marks 4 : 8
Marks 5 : 10

```

C:\Users\KIIT\Desktop\OOP\bin\Debug\OC

```

Name : stu3
Roll Number : 3
Marks 1 : 10
Marks 2 : 9
Marks 3 : 9
Marks 4 : 9
Marks 5 : 10

After Sorting :--

Details :-

Name : stu2
Roll Number : 2
Marks 1 : 10
Marks 2 : 9
Marks 3 : 9
Marks 4 : 8
Marks 5 : 10

Name : stu3
Roll Number : 3
Marks 1 : 10
Marks 2 : 9
Marks 3 : 9
Marks 4 : 9
Marks 5 : 10

Name : stu1
Roll Number : 1
Marks 1 : 10
Marks 2 : 10
Marks 3 : 10
Marks 4 : 9

```

3. WAP to enter id, name, age and basic salary of n number of employees. Calculate the gross salary of all the employees and display it along with all other details in a tabular form, using pointer to structure.

[ Gross salary= Basic salary + DA + HRA,

DA = 80% of Basic salary HRA=10% of

Basic salary ]

```
#include <iostream>
```

```
using namespace std;
```

```
struct emp
```

```
{
```

```
    int id;
```

```
    string nam;
```

```
    int age;
```

```
    int sal;
```

```
    float gross;
```

```
};
```

```
void display(struct emp *st,int l)
```

```
{
```

```
    cout << "Details Entered : - " << endl;
```

```
    for(int i=0;i<l;i++)
```

```
    {
```

```
        cout << "Employee number " << i+1 << "ID : " << st->id << " Name : " << st->nam << " Age : " << st->age << " Sal : " << st->sal << " Gross Sal : " << st->gross << endl;
```

```
        st++;
```

```
    }
```

```
}
```



```

int main()
{
    int n;

    cout << "Enter number of employees : ";

    cin >> n;

    struct emp a[n];

    for(int i=0;i<n;i++)
    {
        cout << "Enter ID, name, age, basic sal of Employee " << i+1 << endl;


        cin >> a[i].id >> a[i].nam >> a[i].age >> a[i].sal;

        a[i].gross = 1.9*a[i].sal;
    }

    struct emp *s = a;

    display(s,n);
}

```

 C:\Users\KIIT\Desktop\OOP\bin\Debug\OOP.exe

```

Enter number of employees : 2
Enter ID, name, age, basic sal of Employee 1
12
bro1
20
36
Enter ID, name, age, basic sal of Employee 2
13
bro2
19
15
Details Entered : -
Employee number 1ID : 12 Name : bro1 Age : 20 Sal : 36 Gross Sal : 68.4
Employee number 2ID : 13 Name : bro2 Age : 19 Sal : 15 Gross Sal : 28.5

Process returned 0 (0x0)   execution time : 52.776 s
Press any key to continue.

```