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ROLL-2005757

BRANCH-CSE (SLOT-1)

[https://github.com/Kingsky1t/OOP\\_Lab\\_2005757](https://github.com/Kingsky1t/OOP_Lab_2005757)

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

```
int main() {
    struct student {
        char name[100];
        int roll;
        int sub[5];
    }s1;

    /* inputs */

    printf("enter the name:");
    scanf("%s",s1.name);
    printf("enter the roll:");
    scanf("%d",&s1.roll);
    printf("enter the marks in 5 subjects:");
    for(int i=0;i<5;i++) {
        scanf("%d",&s1.sub[i]);
    }

    /* outputs */

    printf("the name is %s\n",s1.name);
    printf("the roll no. is %d\n",s1.roll);
    printf("the marks in 5 subjects
are %d %d %d %d %d\n",s1.sub[0],s1.sub[1],s1.sub[2],s1.sub[3],s1.sub[4]);
    return 0;
}
```

#### output

```
enter the name:neel
enter the roll:757
enter the marks in 5 subjects:99 82 87 89 90
the name is neel
the roll no. is 757
the marks in 5 subjects are 99 82 87 89 90
```

- ii 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 <stdio.h>
```

```
/* global variables for ease */
```

```
int n;
```

```
int tot[100],per[100];
```

```
struct student {
```

```
    char name[100];
```

```
    int roll;
```

```
    int sub[5];
```

```
}arr[100];
```

```
/* for calculating total marks and percentages of each student */
```

```
void total_marks() {
```

```
    printf("total marks and percentages are:\n");
```

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

```
        for(int j=0;j<5;j++) {
```

```
            tot[i]+=arr[i].sub[j];
```

```
        }
```

```
        per[i]=tot[i]/5;
```

```
    }
```

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

```

        printf("student %d--> %d %d%%\n",i+1,tot[i],per[i]);
    }
}

```

/\* for printing details of students whose percentage lies within a range \*/

```

void percentage_detail() {
    int a,b,flag=0;
    printf("enter the range:");
    scanf("%d%d",&a,&b);
    for(int i=0;i<n;i++) {
        if(per[i]>=a && per[i]<=b) {
            flag=1;
            printf("%s has a roll no %d with subject
marks %d %d %d %d %d\n",arr[i].name,arr[i].roll,arr[i].sub[0],arr[i].sub[1],arr[i].sub[2],arr[i].sub[3],arr[i].sub[4]);
        }
    }
    if(flag==0){
        printf("no students\n");
    }
}

```

/\* for printing the details of a student whose roll is inputed \*/

```

void print_detail() {
    int x,flag=0;
    printf("enter the roll no:");
    scanf("%d",&x);
    for(int i=0;i<n;i++) {
        if(x==arr[i].roll) {
            flag=1;
            printf("%s has a roll no %d with subject
marks %d %d %d %d %d\n",arr[i].name,arr[i].roll,arr[i].sub[0],arr[i].sub[1],arr[i].sub[2],arr[i].sub[3],arr[i].sub[4]);
        }
    }
}

```

```

    }
    if(flag==0){
        printf("no students\n");
    }
}

```

/\* sorting of total marks array \*/

```

void rearrange() {
    for(int i=0;i<n-1;i++) {
        for(int j=0;j<n-i-1;j++) {
            if(tot[j]<tot[j+1]) {
                int temp=tot[j];
                tot[j]=tot[j+1];
                tot[j+1]=temp;
            }
        }
    }
    printf("\nsorted array:");
    for(int i=0;i<n;i++) {
        printf("%d ",tot[i]);
    }
}

```

```

int main() {
    printf("enter the value of students:");
    scanf("%d",&n);
    for(int j=0;j<n;j++) {
        printf("enter the name:");
        scanf("%s",arr[j].name);
        printf("enter the roll:");
        scanf("%d",&arr[j].roll);
        printf("enter the marks in 5 subjects:");
        for(int i=0;i<5;i++) {
            scanf("%d",&arr[j].sub[i]);

```

```
    }  
}  
total_marks();  
print_detail();  
percentage_detail();  
rearrange();  
return 0;  
}
```

#### output

enter the name:neel  
enter the roll:757  
enter the marks in 5 subjects:90 98 96 88 83  
enter the name:khusi  
enter the roll:742  
enter the marks in 5 subjects:99 98 97 86 82  
enter the name:rick  
enter the roll:723  
enter the marks in 5 subjects:78 86 90 85 80  
total marks and percentages are:  
student 1--> 455 91%  
student 2--> 462 92%  
student 3--> 419 83%  
enter the roll no:723  
rick has a roll no 723 with subject marks 78 86 90 85 80  
enter the range:80 90  
rick has a roll no 723 with subject marks 78 86 90 85 80  
sorted array:462 455 419

iii 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 <stdio.h>
```

```
int main() {
    int n;
    printf("enter the number of employees:");
    scanf("%d",&n);
    struct employee{
        char id[100];
        char name[100];
        int age;
        double bas_sal;
        double grs_sal;
    }arr[n];
    struct employee *p=arr;

    /* input */

    for(int i=0;i<n;i++) {
        printf("enter data of employee no:%d\n",i+1);
        printf("enter the id:");
        scanf("%s",p->id);
        printf("enter the name:");
        scanf("%s",p->name);
        printf("enter the age:");
        scanf("%d",&(p->age));
        printf("enter the basic salary:");
        scanf("%lf",&(p->bas_sal));
        p->grs_sal=p->bas_sal+(0.8*p->bas_sal)+(0.1*p->bas_sal);
        p++;
    }

    /* outputs */

    p=arr;
    printf("IDs\tNAME\tAGE\tBASIC SALARY\tGROSS SALARY\n");
```

```

    for(int i=0;i<n;i++) {
        printf("%s\t",p->id);
        printf("%s\t",p->name);
        printf("%d\t",p->age);
        printf("%lf\t",p->bas_sal);
        printf("%lf\n",p->grs_sal);
        p++;
    }
    return 0;
}

```

### output

enter the number of employees:3  
 enter data of employee no:1  
 enter the id:id56f  
 enter the name:neel  
 enter the age:19  
 enter the basic salary:4500  
 enter data of employee no:2  
 enter the id:id77g  
 enter the name:khusi  
 enter the age:19  
 enter the basic salary:5000  
 enter data of employee no:3  
 enter the id:id22a  
 enter the name:rick  
 enter the age:20  
 enter the basic salary:4000

IDs	NAME	AGE	BASIC SALARY	GROSS SALARY
id56f	neel	19	4500.000000	8550.000000
id77g	khusi	19	5000.000000	9500.000000
id22a	rick	20	4000.000000	7600.000000