**Assignment - 21**

**A Job Ready Bootcamp in C++, DSA and IOT**

**Structure**

1. Define a structure Employee with member variables id, name, salary

#include<stdio.h>

#include<string.h>

struct employee

{

int id;

char name[20];

float salary;

};

1. Write a function to take input employee data from the user. [ Refer structure from question 1 ]

#include<stdio.h>

#include<string.h>

struct employee

{

int id;

char name[20];

float salary;

};

void input()

{

struct employee b;

printf("Enter Employee id, name, salary\n");

scanf("%d %s %f",&b.id,&b.name,&b.salary);

}

int main()

{

input();

}

1. Write a function to display employee data. [ Refer structure from question 1 ]

#include<stdio.h>

#include<string.h>

struct employee

{

int id;

char name[20];

float salary;

};

struct employee input()

{

struct employee b;

printf("Enter Employee id:\n");

scanf("%d",&b.id);

fflush(stdin);

printf("Enter Employee name:\n");

scanf("%s",&b.name);

printf("Enter Employee salary:\n");

scanf("%f",&b.salary);

return b;

}

void display(struct employee a)

{

printf("ID=%d, Name=%s, Salary=%f",a.id,a.name,a.salary);

}

int main()

{

struct employee a;

a=input();

display(a);

return 0;

}

1. Write a function to find the highest salary employee from a given array of 10 employees. [ Refer structure from question 1]

#include<stdio.h>

#include<string.h>

struct employee

{

int id;

char name[20];

int salary;

};

void maxSal()

{

struct employee a[3];

int i,max=-1;

for(i=0;i<3;i++){

printf("Enter employee id\n");

scanf("%d",&a[i].id);

printf("Enter employee name\n");

scanf("%s",&a[i].name);

printf("Enter employee salary\n");

scanf("%d",&a[i].salary);

}

for(i=0;i<3;i++)

{

if(a[i].salary>max)

max=a[i].salary;

}

printf("Highest salary is %d",max);

}

int main()

{

maxSal();

}

5. Write a function to sort employees according to their salaries [ refer structure from question 1]

#include<stdio.h>

#include<string.h>

struct employee

{

int id;

char name[20];

float salary;

};

struct employee input()

{

struct employee b;

printf("Enter Employee id:\n");

scanf("%d",&b.id);

fflush(stdin);

printf("Enter Employee name:\n");

scanf("%s",&b.name);

printf("Enter Employee salary:\n");

scanf("%f",&b.salary);

return b;

}

void display(struct employee a)

{

printf("ID=%d, Name=%s, Salary=%f",a.id,a.name,a.salary);

}

void sort(struct employee b[],int size)

{

struct employee temp;

int i,j;

for(i=0;i<size-1;i++)

{

for(j=i+1;j<size;j++)

{

if(b[i].salary>b[j].salary)

{

temp=b[i];

b[i]=b[j];

b[j]=temp;

}

}

}

}

int main()

{

struct employee a[3];

int i;

for(i=0;i<3;i++)

a[i]=input();

sort(a,3);

for(i=0;i<3;i++)

display(a[i]);

return 0;

}

6. Write a function to sort employees according to their names [refer structure from question 1]

#include<stdio.h>

#include<string.h>

struct employee

{

int id;

char name[20];

float salary;

};

struct employee input()

{

struct employee b;

printf("Enter Employee id:\n");

scanf("%d",&b.id);

fflush(stdin);

printf("Enter Employee name:\n");

scanf("%s",&b.name);

printf("Enter Employee salary:\n");

scanf("%f",&b.salary);

return b;

}

void display(struct employee a)

{

printf("ID=%d, Name=%s, Salary=%f\n",a.id,a.name,a.salary);

}

void sort(struct employee str[],int size)

{

struct employee temp[20];

int i,j,r;

for(i=1;i<size;i++)

{

for(j=0;j<size-i;j++)

{

r=strcmp(str[j].name,str[j+1].name);

if(r>0)

{

strcpy(temp,str[j].name);

strcpy(str[j].name,str[j+1].name);

srecpy(str[j+1].name,temp);

}

}

}

}

int main()

{

struct employee a[3];

int i;

for(i=0;i<3;i++)

a[i]=input();

sort(a,3);

for(i=0;i<3;i++)

display(a[i]);

return 0;

}

Output is not currect

7. Write a program to calculate the difference between two time periods.

8. Write a program to store information of 10 students and display them using structure.

#include<stdio.h>

#include<string.h>

struct student

{

char name[20];

int cls;

char sec;

int rolno;

int mob;

};

struct student input()

{

struct student s;

printf("Enter student name\n");

fgets(s.name,20,stdin);

fflush(stdin);

printf("Enter class of the student\n");

scanf("%d",&s.cls);

fflush(stdin);

printf("Enter student section\n");

scanf("%c",&s.sec);

printf("Enter student roll.no\n");

scanf("%d",&s.rolno);

printf("Enter student mobile no.\n");

scanf("%d",&s.mob);

return s;

}

void display(struct student b)

{

printf("Name=%s, Class=%d, Section=%c",b.name,b.cls,b.sec);

printf("Roll no=%d, MobNo=%d",b.rolno,b.mob);

}

int main()

{

struct student stu[2];

int i;

for(i=0;i<2;i++)

stu[i]=input();

for(i=0;i<2;i++)

display(stu[i]);

}

9. Write a program to store information of n students and display them using structure

#include<stdio.h>

#include<string.h>

struct student

{

char name[20];

int cls;

char sec;

int rolno;

int mob;

};

struct student input()

{

struct student s;

fflush(stdin);

printf("Enter student name\n");

fgets(s.name,20,stdin);

fflush(stdin);

printf("Enter class of the student\n");

scanf("%d",&s.cls);

fflush(stdin);

printf("Enter student section\n");

scanf("%c",&s.sec);

printf("Enter student roll.no\n");

scanf("%d",&s.rolno);

printf("Enter student mobile no.\n");

scanf("%d",&s.mob);

return s;

}

void display(struct student b)

{

printf("\nName=%s, Class=%d, Section=%c",b.name,b.cls,b.sec);

printf("Roll no=%d, MobNo=%d",b.rolno,b.mob);

}

int main()

{

struct student stu[100];

int i,n;

printf("How many student information you want to store");

scanf("%d",&n);

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

stu[i]=input();

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

display(stu[i]);

}

10. Write a program to enter the marks of 5 students in Chemistry, Mathematics and Physics (each out of 100) using a structure named Marks having elements roll no., name, chem\_marks, maths\_marks and phy\_marks and then display the percentage of each student

#include<stdio.h>

#include<string.h>

struct marks

{

char name[20];

int rolno;

float che\_mark;

float math\_mark;

float phy\_mark;

};

struct marks input()

{

struct marks a;

fflush(stdin);

printf("Enter student name\n");

gets(a.name);

printf("Enter roll no.\n");

scanf("%d",&a.rolno);

printf("Enter Chemastry mark\n");

scanf("%f",&a.che\_mark);

printf("Enter Math mark\n");

scanf("%f",&a.math\_mark);

printf("Enter Physic mark\n");

scanf("%f",&a.phy\_mark);

return a;

}

void display(struct marks b)

{

int totalMar=300;

float percent=0;

printf("Name=%s\n",b.name);

printf("Roll no.=%d\n",b.rolno);

printf("Chemastry mark=%f\n",b.che\_mark);

printf("Math mark=%f\n",b.math\_mark);

printf("Physic mark=%f\n",b.phy\_mark);

percent=(b.che\_mark+b.math\_mark+b.phy\_mark)/totalMar\*100;

printf("Percent is %f\n",percent);

}

int main()

{

struct marks mm[5];

int i;

for(i=0;i<2;i++)

mm[i]=input();

for(i=0;i<2;i++)

display(mm[i]);

}