**Assignment - 21 A Job Ready Bootcamp in C++, DSA and IOT MySirG**

**Structure**

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

Sol – 1.

#include<stdio.h>

#include<conio.h>

int main()

{

struct employee

{

int id;

char name[20];

int salary;

};

getch();

return 0;

}

2. Write a function to take input employee data from the user. [ Refer structure from

question 1 ]

Sol – 2.

#include<stdio.h>

#include<conio.h>

void input();

struct employee

{

int id;

char name[20];

int salary;

}e1;

int main()

{

input();

getch();

return 0;

}

void input()

{

printf("Enter ID of employee : ");

scanf("%d",&e1.id);

printf("Enter the name of employee : ");

fflush(stdin);

fgets(e1.name,20,stdin);

printf("Enter salary of employee : ");

scanf("%d",&e1.salary);

}

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

Sol – 3.

#include<stdio.h>

#include<conio.h>

#include<string.h>

void input();

void display();

struct employee

{

int id;

char name[20];

int salary;

}e1;

int main()

{

input();

display();

getch();

return 0;

}

void input()

{

printf("Enter ID of employee : ");

scanf("%d",&e1.id);

printf("Enter the name of employee : ");

fflush(stdin);

fgets(e1.name,20,stdin);

e1.name[strlen(e1.name)-1]=0;

printf("Enter salary of employee : ");

scanf("%d",&e1.salary);

}

void display()

{

printf("Employee ID : %d, Employee Name : %s, Employee Salary : %d",e1.id,e1.name,e1.salary);

}

4. Write a function to find the highest salary employee from a given array of 10

employees. [ Refer structure from question 1]

Sol – 4.

#include<stdio.h>

#include<conio.h>

#include<string.h>

void input();

void display(struct employee);

struct employee

{

int id;

char name[20];

int salary;

}e[10];

int main()

{

int i,j;

input();

for(i=0;i<10;i++)

{

for(j=i;j<10;j++)

{

if(e[i].salary<e[j].salary)

break;

}

if(j==10)

{

display(e[i]);

break;

}

}

getch();

return 0;

}

void input()

{

int i;

for(i=0;i<10;i++)

{

printf("Enter ID of employee : ");

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

printf("Enter the name of employee : ");

fflush(stdin);

fgets(e[i].name,20,stdin);

e[i].name[strlen(e[i].name)-1]=0;

printf("Enter salary of employee : ");

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

}

}

void display(struct employee e1)

{

printf("\n\nHighest Salary employee details\nEmployee ID : %d, Employee Name : %s, Employee Salary : %d",e1.id,e1.name,e1.salary);

}

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

question 1]

Sol – 5.

#include<stdio.h>

#include<conio.h>

#include<string.h>

void input();

void display();

struct employee

{

int id;

char name[20];

int salary;

}e[10];

int main()

{

int i,j,temp;

input();

for(i=0;i<9;i++)

{

for(j=i+1;j<10;j++)

{

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

{

temp=e[i].salary;

e[i].salary=e[j].salary;

e[j].salary=temp;

}

}

}

display();

getch();

return 0;

}

void input()

{

int i;

for(i=0;i<10;i++)

{

printf("Enter ID of employee : ");

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

printf("Enter the name of employee : ");

fflush(stdin);

fgets(e[i].name,20,stdin);

e[i].name[strlen(e[i].name)-1]=0;

printf("Enter salary of employee : ");

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

}

}

void display()

{

int i;

printf("\nAfter Sorting according to salary");

for(i=0;i<10;i++)

{

printf("\n\nEmployee ID : %d, Employee Name : %s, Employee Salary : %d\n",e[i].id,e[i].name,e[i].salary);

}

}

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

question 1]

Sol – 6.

#include<stdio.h>

#include<conio.h>

#include<string.h>

void input();

void display();

struct employee

{

int id;

char name[20];

int salary;

}e[10];

int main()

{

int i,j;

char temp[20];

input();

for(i=0;i<9;i++)

{

for(j=i+1;j<10;j++)

{

if(strcmp(e[i].name,e[j].name)>0)

{

strcpy(temp,e[i].name);

strcpy(e[i].name,e[j].name);

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

}

}

}

display();

getch();

return 0;

}

void input()

{

int i;

for(i=0;i<10;i++)

{

printf("Enter ID of employee : ");

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

printf("Enter the name of employee : ");

fflush(stdin);

fgets(e[i].name,20,stdin);

e[i].name[strlen(e[i].name)-1]=0;

printf("Enter salary of employee : ");

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

}

}

void display()

{

int i;

printf("\nAfter Sorting according to names");

for(i=0;i<10;i++)

{

printf("\n\nEmployee ID : %d, Employee Name : %s, Employee Salary : %d\n",e[i].id,e[i].name,e[i].salary);

}

}

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

Sol – 7.

#include<stdio.h>

#include<conio.h>

int main()

{

struct time

{

int hr,min,sec;

}st,end,diff;

printf("Enter start time hour, minute and second : ");

scanf("%d %d %d",&st.hr,&st.min,&st.sec);

printf("Enter end time hour, minute and second : ");

scanf("%d %d %d",&end.hr,&end.min,&end.sec);

if(st.sec>end.sec)

{

end.min--;

end.sec+=60;

}

if(st.min>end.min)

{

end.hr--;

end.min+=60;

}

diff.hr=end.hr-st.hr;

diff.min=end.min-st.min;

diff.sec=end.sec-st.sec;

printf("\nDifference is : %dhr : %dmin : %dsec",diff.hr,diff.min,diff.sec);

getch();

return 0;

}

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

Sol – 8.

#include<stdio.h>

#include<conio.h>

#include<string.h>

void input();

void display();

struct student

{

int roll\_no ;

char name[20];

int rank;

}e[10];

int main()

{

input();

display();

getch();

return 0;

}

void input()

{

int i;

for(i=0;i<10;i++)

{

printf("Enter roll number of student : ");

scanf("%d",&e[i].roll\_no );

printf("Enter the name of student : ");

fflush(stdin);

fgets(e[i].name,20,stdin);

e[i].name[strlen(e[i].name)-1]=0;

printf("Enter rank of student : ");

scanf("%d",&e[i].rank);

}

}

void display()

{

int i;

for(i=0;i<10;i++)

{

printf("\nStudent Roll Number : %d, Student Name : %s, Student Rank : %d\n",e[i].roll\_no ,e[i].name,e[i].rank);

}

}

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

Sol – 9.

#include<stdio.h>

#include<conio.h>

#include<string.h>

struct student

{

int roll\_no ;

char name[20];

int rank;

};

int main()

{

int i,n;

printf("Enter the number of students : ");

scanf("%d",&n);

struct student e[n];

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

{

printf("\n");

printf("Enter roll number of student : ");

scanf("%d",&e[i].roll\_no );

printf("Enter the name of student : ");

fflush(stdin);

fgets(e[i].name,20,stdin);

e[i].name[strlen(e[i].name)-1]=0;

printf("Enter rank of student : ");

scanf("%d",&e[i].rank);

}

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

{

printf("\nStudent Roll Number : %d, Student Name : %s, Student Rank : %d\n",e[i].roll\_no ,e[i].name,e[i].rank);

}

getch();

return 0;

}

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.

Sol – 10.

#include<stdio.h>

#include<conio.h>

#include<string.h>

struct Marks

{

int roll\_no ;

char name[20];

int chem\_marks, maths\_marks, phy\_marks;

};

int main()

{

int i;

struct Marks e[5];

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

{

printf("\n");

printf("Enter roll number of student : ");

scanf("%d",&e[i].roll\_no );

printf("Enter the name of student : ");

fflush(stdin);

fgets(e[i].name,20,stdin);

e[i].name[strlen(e[i].name)-1]=0;

printf("Enter marks in Chemistry : ");

scanf("%d",&e[i].chem\_marks);

printf("Enter marks in Maths : ");

scanf("%d",&e[i].maths\_marks);

printf("Enter marks in Physics : ");

scanf("%d",&e[i].phy\_marks);

}

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

{

printf("\nStudent Roll Number : %d, Student Name : %s, Percentage : %f\n",e[i].roll\_no ,e[i].name,(e[i].chem\_marks+e[i].phy\_marks+e[i].maths\_marks)/3.0);

}

getch();

return 0;

}