Assignment 21

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

#include<stdio.h>

struct employee

{

    int id;

    char name[100];

    int salary;

};

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

question 1 ]

#include<stdio.h>

struct employee

{

    int id;

    char name[100];

    int salary;

};

int main(){

    struct employee e;

    printf("enter the naem of employee:  ");

    gets(e.name);

    printf("enter the id of employee: ");

    scanf("%d",&e.id);

    printf("\nenter the salary:  ");

    scanf("%d",&e.salary);

    printf("\nID  : %d",e.id);

    printf("\nname= %s", e.name);

    printf("\nsalary : %d",e.salary);

    return 0;

}

output;

enter the naem of employee: tushar

enter the id of employee: 456987

enter the salary: 100000

ID : 456987

name= tushar

salary : 100000

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

employees. [ Refer structure from question 1]

#include<stdio.h>

struct employee

{

    int id;

    char name[100];

    int salary;

};

int main(){

    struct employee e[5],temp;

   for (int i = 0; i < 5; i++)

   {

        printf("enter the id : ");

        scanf("%d",&e[i].id);

        printf("enter the name : ");

        fflush(stdin);

        fgets(e[i].name,100,stdin);

        printf("enter the salary : ");

        scanf("%d",&e[i].salary);

   }

        for(int i=1;i<=4;i++)

        {

            for(int j=i;j<4-i;j++)

            {

                if(e[j].salary > e[j+1].salary)

                {

                    temp=e[j];

                    e[j]=e[j+1];

                    e[j=1]=temp;

                }

            }

        }

    for (int i = 0; i < 5; i++)

   {

        printf(" id : %d",e[i].id);

        printf(" name : %s",e[i].name);

        printf(" salary : %d",e[i].salary);

        printf("\n");

   }

    return 0;

}

output:

enter the id : 1

enter the name : tushar

enter the salary : 123

enter the id : 2

enter the name : harshad

enter the salary : 456

enter the id : 3

enter the name : om

enter the salary : 789

enter the id : 4

enter the name : pawan

enter the salary : 789

enter the id : 5

enter the name : rati

enter the salary : 963

id : 1 name : tushar

salary : 123

id : 2 name : harshad

salary : 456

id : 3 name : om

salary : 789

id : 4 name : pawan

salary : 789

id : 5 name : rati

salary : 963

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

#include<stdio.h>

#include<cstring>

struct employee

{

    int id;

    char name[100];

    int salary;

};

int main(){

    struct employee e[5],temp;

   for (int i = 0; i < 5; i++)

   {

        printf("enter the id : ");

        scanf("%d",&e[i].id);

        printf("enter the name : ");

        fflush(stdin);

        fgets(e[i].name,100,stdin);

        printf("enter the salary : ");

        scanf("%d",&e[i].salary);

   }

        for(int i=0;i<4;i++)

        {

            for(int j=i;j<5;j++)

            {

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

                {

                    temp=e[i];

                    e[i]=e[j];

                    e[j]=temp;

                }

            }

        }

    for (int i = 0; i < 5; i++)

   {

        printf(" id : %d",e[i].id);

        printf(" name : %s",e[i].name);

        printf(" salary : %d",e[i].salary);

        printf("\n");

   }

    return 0;

}

enter the name : raman

enter the salary : 951

id : 4 name : dhiman

salary : 741

id : 2 name : harshadd

salary : 654

id : 3 name : kunal

salary : 987

id : 5 name : raman

salary : 951

id : 1 name : tushar

salary : 124

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

#include<stdio.h>

#include<cstring>

struct time

{

    int hr;

    int min;

    int sec;

};

void diff\_between\_time(struct time start, struct time stop,struct time \*diff);

int main(){

    struct time start\_time, stop\_time,diff;

    printf("enter the time\n ");

    printf("enter hours minutes and seconds : \n");

    scanf("%d %d %d",&start\_time.hr,&start\_time.min,&start\_time.sec);

    printf("enter the stop time\n ");

    printf("enter hours minutes and seconds : \n");

    scanf("%d %d %d",&stop\_time.hr,&stop\_time.min,&stop\_time.sec);

    diff\_between\_time(start\_time,stop\_time,&diff);

    printf("\n time diffrenece %d: %d: %d -",start\_time.hr,start\_time.min,start\_time.sec);

    printf("%d: %d: %d =", stop\_time.hr,stop\_time.min,stop\_time.sec);

    printf("%d: %d: %d \n",diff.hr,diff.min,diff.sec);

    return 0;

}

void diff\_between\_time(struct time start, struct time stop,struct time \*diff)

{

    while (stop.sec>start.sec)

    {

        --start.min;

        start.sec+=60;

    }

    diff->sec=start.sec-stop.sec;

    while(stop.min>start.min)

    {

        --start.hr;

        start.min+=60;

    }

    diff->min=start.min-stop.min;

    diff->hr=start.hr-stop.hr;

}

Output;

enter the time

enter hours minutes and seconds :

4 25 36

enter the stop time

enter hours minutes and seconds :

4 25 11

time diffrenece 4: 25: 36 -4: 25: 11 =0: 0: 25

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

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

#include<stdio.h>

struct student

{

    int roll\_no;

    char name[100];

    int age;

    char blood\_grp[5];

};

int main()

{

    struct student s[10];

    printf("enter the roll number, name age and blood group of the 10 student respectively\n");

    for (int i = 0; i < 10; i++)

    {

        scanf("%d",&s[i].roll\_no);

        scanf("%s",&s[i].name);

        scanf("%d",&s[i].age);

        scanf("%s",&s[i].blood\_grp);

    }

    printf("the information of the student is as follow:  ");

    for (int i = 0; i < 10; i++)

    {

       printf("\n %d. %d  %s   %d  %s",(i+1),s[i].roll\_no,s[i].name,s[i].age,s[i].blood\_grp);

    }

    return 0;

}

Output:

enter the roll number, name age and blood group of the 10 student respectively

06001 harshad 23 A+

06002 tushar 23 A+

06003 yatendar 22 A+

06004 rahul 23 B+

06005 rakesh 24 B+

06006 parvees 23 A+

06007 dhiman 22 B+

06008 prahsant 21 B+

06009 keshav 25 A+

06010 riniki 22 B+

the information of the student is as follow:

1. 6001 harshad 23 A+

2. 6002 tushar 23 A+

3. 6003 yatendar 22 A+

4. 6004 rahul 23 B+

5. 6005 rakesh 24 B+

6. 6006 parvees 23 A+

7. 6007 dhiman 22 B+

8. 6008 prahsant 21 B+

9. 6009 keshav 25 A+

10. 6010 riniki 22 B+

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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>

struct student

{

    int roll\_no;

    char name[100];

    int chem\_mark;

    int phy\_mark;

    int math\_mark;

    int percent;

};

int main()

{

    struct student s[3];

    printf("enter the roll no , name, marks of chemistry , physics and maths of 3 students\n: ");

    for (int i = 0; i < 3; i++)

    {

        scanf("%d %s %d %d %d",&s[i].roll\_no,&s[i].name,&s[i].chem\_mark,&s[i].phy\_mark,&s[i].math\_mark);

    }

    for (int i = 0; i < 3; i++)

    {

        s[i].percent=((s[i].chem\_mark+s[i].phy\_mark+s[i].math\_mark)/3);

    }

    printf("the percentage of the students :");

    for (int i = 0; i < 3; i++)

    {

        printf(" \n%d. %d  %s  %d ",i+1,s[i].roll\_no,s[i].name,s[i].percent);

    }

    return 0;

}

Output;

3 students

: 175101 tushar 87 79 85

175106 harshad 65 85 74

175108 pranav 88 99 77

the percentage of the students :

1. 175101 tushar 83

2. 175106 harshad 74

3. 175108 pranav 88

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