

May 16 Home questions

#1. WAP to create a new data type DATE with the help of structure and typedef. Write the following user defined functions for the date manipulations.

- a) To return next date
- b) To return next month.
- c) To return next year.
- d) to add few days in a date.
- e) To add few months in a date.
- f) To add few years in a date.
- g) To return month name from a date.
- h) To display date in various format such as DD-MM-YYYY, DD.MM.YY

Code:

```
#include <stdio.h>
void next(int date_285, int month_285, int year_285)
{
    printf("Next day is=> ");
    if(date_285+1>30)
        printf(" 01|%d|%d\n",month_285+1,year_285);
    else
        printf(" %d|%d|%d\n",date_285+1,month_285,year_285);
}
void nextmonth(int month)
{
    printf("Next month is=>");
    if(month+1>12)
        printf(" September\n");
    else
        printf(" %d\n", month+1);
}
void nextyear(int year)
{
    printf("Next month is=>");
    printf(" %d\n", year+1);
}
void add_days(int date, int month, int year)
{
    int n;
    printf("How many days do u want to add?\n");
    scanf("%d",&n);
    if(date+n>30)
        printf(" 01|%d|%d\n",month+1,year);
    else
        printf(" %d|%d|%d\n",date+n,month,year);
}
void month_name(int month)
{
    if(month==1)
        printf("The month is January\n");
    if(month==2)
        printf("The month is February\n");
    if(month==3)
        printf("The month is March\n");
    if(month==4)
        printf("The month is April\n");
    if(month==5)
        printf("The month is May\n");
}
```

KIDUS ABEBE MEKONEN

Roll No- 2106285

Section A11

IT department

```
        if(month==6)
            printf("The month is June\n");
        if(month==7)
            printf("The month is July\n");
        if(month==8)
            printf("The month is August\n");
        if(month==9)
            printf("The month is September\n");
        if(month==10)
            printf("The month is October\n");
        if(month==11)
            printf("The month is November\n");
        if(month==12)
            printf("The month is December\n");
    }
    typedef struct DATE{
        int date;
        int month;
        int year;
    }DATE;
    int main()
    {
        DATE d1;
        int i,j;
        printf("Please provide the date, month and year respectively\n");
        scanf("%d%d%d", &d1.date,&d1.month,&d1.year);
        next(d1.date,d1.month,d1.year);
        printf("\n\n");
        nextmonth(d1.month);
        printf("\n\n");
        nextyear(d1.year);
        printf("\n\n");
        add_days(d1.date,d1.month,d1.year);
        printf("\n\n");
        month_name(d1.month);
        printf("\n\n");
    }
```

Output:

KIDUS ABEBE MEKONEN

Roll No- 2106285

Section A11

IT department

```
PS C:\Users\KIIT\Desktop\Programming\16_may Structs> gcc date_manipulation.c
PS C:\Users\KIIT\Desktop\Programming\16_may Structs> ./a.exe
Please provide the date, month and year respectively
12 5 2000
Next day is=> 13|5|2000

Next month is=> 6

Next month is=> 2001

How many days do u want to add?
10
22|5|2000

The month is May

PS C:\Users\KIIT\Desktop\Programming\16_may Structs> █
```

#2. WAP to calculate the difference between two time periods. Times are given in hr, min and sec.

Code:

```
#include <stdio.h>
typedef struct time{
    int hour;
    int minute;
    int second;
}time;
int main()
{
    time t1_285,t2_285,t3_285;
    int h1,h2,h3,m1,m2,m3,s1,s2,s3;
    printf("Please give the first timing in hour/minutes/second format\n");
    scanf("%d%d%d",&h1,&m1,&s1);
    printf("Please give the second timing in hour/minutes/second format\n");
    scanf("%d%d%d",&h2,&m2,&s2);
    t1_285.hour=h1;
    t1_285.minute=m1;
    t1_285.second=s1;
    t2_285.hour=h2;
    t2_285.minute=m2;
    t2_285.second=s2;
    t3_285.hour= t1_285.hour-t2_285.hour;
    t3_285.minute=t1_285.minute-t2_285.minute;
    t3_285.second=t1_285.second-t2_285.second;
    if(t3_285.second<0)
    {
        t3_285.second=-1*(t3_285.second);
    }
    if(t3_285.minute<0)
    {
        t3_285.minute=-1*(t3_285.minute);
    }
    if(t3_285.hour<0)
    {

```

KIDUS ABEBE MEKONEN

Roll No- 2106285

Section A11

IT department

```
        t3_285.hour=-1*(t3_285.hour);
    }
    printf("The difference of your two timing is %d hours %d minues and %d
seconds\n",t3_285.hour,t3_285.minute,t3_285.second);
    return 0;
}
```

Output:

```
PS C:\Users\KIIT\Desktop\Programming\16_may Structs> gcc time_struct2.c
PS C:\Users\KIIT\Desktop\Programming\16_may Structs> ./a.exe
Please give the first timing in hour/minutes/second format
5 34 23
Please give the second timing in hour/minutes/second format
1 59 59
The difference of your two timing is 4 hours 25 minues and 36 seconds
PS C:\Users\KIIT\Desktop\Programming\16_may Structs> █
```

#3. WAP to extract individual bytes from an unsigned int using union.

Code:

```
#include<stdio.h>

union tagname_285
{
    unsigned int a;
    unsigned char s[4];
};
union tagname_285 object_285;
int main()
{
    char i;
    object_285.a=0xAABBCCDD;
    printf("Integer number: %ld, hex: %X\n",object_285.a,object_285.a);
    printf("Indivisual bytes: ");
    for(i=3;i>=0;i--)
        printf("%02X ",object_285.s[i]);
    printf("\n");
    return 0;
}
```

Output:

```
PS C:\Users\KIIT\Desktop\Programming\16_may Structs> gcc individual_bytes.c
PS C:\Users\KIIT\Desktop\Programming\16_may Structs> ./a.exe
Integer number: -1430532899, hex: AABBCCDD
Indivisual bytes: AA BB CC DD
PS C:\Users\KIIT\Desktop\Programming\16_may Structs> █
```