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Course: C, DSA and C++

Assignment 3 – If else & for loop – Practical 01

Q.1. WAP to check whether a given year is a leap year or not:

```
aditi@DESKTOP-ANL3TOH: /n
//To find if a year is a leap year or not


#include<stdio.h>

void main()
{
        int year;
        printf("Enter the year:\n");
        scanf("%d",&year);
        if(year%4==0 && year%400==0)
        {
                printf("%d is a Leap year\n",year);
        }
        else
        {
                printf("%d is not a leap year\n",year);
        }
}
```

Output:

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ vim ques1.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ cc ques1.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter the year:
2000
2000 is a Leap year
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter the year:
1999
1999 is not a leap year
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$
```

Q.2. WAP to find max among three nos.:

```
aditi@DESKTOP-ANL3TOH: /n
//To find max among three nos.

#include<stdio.h>

        void main()
{
        int num1,num2,num3;
        printf("Enter three nos.:\n");
        scanf("%d %d %d",&num1,&num2,&num3);
        if(num1>num2 && num1>num3)
        {
                printf("%d is max. among thge three\n",num1);
        }
        else if(num2>num1 && num2>num3)
        {
                printf("%d is max. among the three\n",num2);
        }
        else
        {
                printf("%d is max. among the three\n",num3);
        }
}
```

Output:

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ vim ques2.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ cc ques2.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter three nos.:
2 3 4
4 is max. among the three
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter three nos.:
2 4 3
4 is max. among the three
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$
```

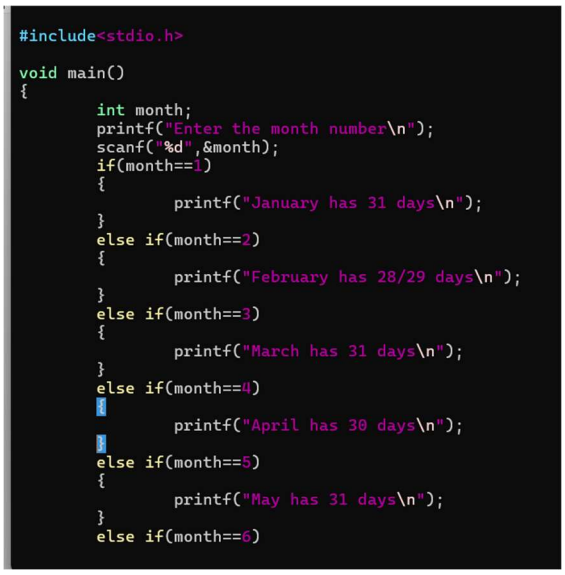
Q.3. WAP to find min. among 3 nos.:

```c
//to find min. among 3 nos.


#include<stdio.h>

void main()
{
        int num1,num2,num3;
        printf("Enter 3 nos.\n");
        scanf("%d %d %d",&num1,&num2,&num3);
        if(num1<num2 && num1<num3)
        {
                printf("%d is min. among the 3\n",num1);
        }
        else if(num2<num1 && num2<num3)
        {
                printf("%d is min among the 3\n",num2);
        }
        else
        {
                printf("%d is min. among the 3\n",num3);
        }
}
```

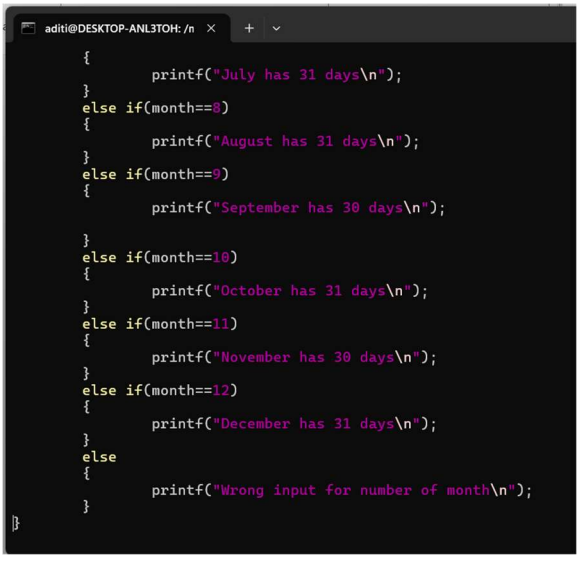
Output:

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ vim ques3.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ cc ques3.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter 3 nos.
2 4 3
2 is min. among the 3
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$
```

Q.4. WAP where according to the month number print the no. of days in that month:

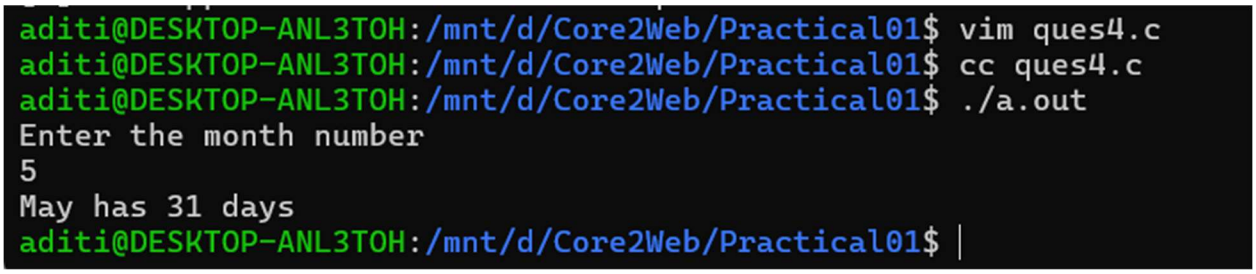


```c
#include<stdio.h>

void main()
{
        int month;
        printf("Enter the month number\n");
        scanf("%d",&month);
        if(month==1)
        {
                printf("January has 31 days\n");
        }
        else if(month==2)
        {
                printf("February has 28/29 days\n");
        }
        else if(month==3)
        {
                printf("March has 31 days\n");
        }
        else if(month==4)
        {
                printf("April has 30 days\n");
        }
        else if(month==5)
        {
                printf("May has 31 days\n");
        }
        else if(month==6)
```



```c
aditi@DESKTOP-ANL3TOH: /n
        {
                printf("July has 31 days\n");
        }
        else if(month==8)
        {
                printf("August has 31 days\n");
        }
        else if(month==9)
        {
                printf("September has 30 days\n");

        }
        else if(month==10)
        {
                printf("October has 31 days\n");
        }
        else if(month==11)
        {
                printf("November has 30 days\n");
        }
        else if(month==12)
        {
                printf("December has 31 days\n");
        }
        else
        {
                printf("Wrong input for number of month\n");
        }
}
```

Output:



```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ vim ques4.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ cc ques4.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter the month number
5
May has 31 days
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$
```

Q.5. WAP to take a no. from 1 to 5 and prints its spelling:

```c
#include<stdio.h>
 void main()
{
        int num;
        printf("Enter a number from 1 to 5\n");
        scanf("%d",&num);
        switch(num)
        {
                case 1:
                        printf("1 - One\n");
                        break;
                case 2:
                        printf("2 - Two\n");
                        break;
                case 3:
                        printf("3 - Three\n");
                        break;
                case 4:
                        printf("4 - Four\n");
                        break;
                case 5:
                        printf("5 - Five\n");
                        break;
                default:
                        printf("Wrong Input\n");
        }
}
```

Output:

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ vim ques5.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ cc ques5.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter a number from 1 to 5
5
5 - Five
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter a number from 1 to 5
2
2 - Two
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter a number from 1 to 5
9
Wrong Input
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$
```

Q.6. WAP to get 10 nos. From users and get their sum and avg.:

aditi@DESKTOP-ANL3TOH: /n

```c
//to get 10 nos. from users and print their sum and avg.

#include<stdio.h>

void main()
{
        int n;
        int sum=0;
        int avg;

        printf("Enter 10 nos.\n");
        for(int i=1;i<=10;i++)
        {
                scanf("%d",&n);
                sum+=n;
        }
        avg=sum/10;
        printf("The sum of 10 nos. is %d\n",sum);
        printf("The avg of 10 nos. is %d\n",avg);
}
```

Output:

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter 10 nos.
1
2
3
4
5
6
7
8
9
10
The sum of 10 nos. is 55
The avg of 10 nos. is 5
```

Q.7. WAP to identify if the given input is a Pythagorean Triplet or not:

```c
//To find if the given input is a pythagorean triplet or not

#include<stdio.h>
void main()
{
        int x,y,z;
        printf("Enter the 3 nos.\n");
        scanf("%d %d %d",&x,&y,&z);
        if(x*x==y*y+z*z || y*y==z*z+x*x || z*z==x*x+y*y)
        {
                printf("%d, %d, %d are pythagorean triplet\n",x,y,z);
        }
        else
        {
                printf("Not a triplet\n");
        }
}
```

Output:

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ vim ques7.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ cc ques7.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter the 3 nos.
3 4 5
3, 4, 5 are pythagorean triplet
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter the 3 nos.
7 8 9
Not a triplet
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$
```

Q.8. WAP that take measures of the angles of triangle or not and finds whether valid triangle or not:

```c
//valid triangle or not


#include<stdio.h>

void main()
{
        int a1,a2,a3;
        printf("Enter the angles of the traingle:\n");
        scanf("%d %d %d",&a1,&a2,&a3);
        if(a1+a2+a3==180)
        {
                printf("Valid Triangle\n");

        }
        else
        {
                printf("Invalid Triangle\n");
        }
}
```

Output:

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ vim ques7.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ vim ques8.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ cc ques8.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter the angles of the traingle:
30 60 90
Valid Triangle
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter the angles of the traingle:
30 70 80
Valid Triangle
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter the angles of the traingle:
30 70 90
Invalid Triangle
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$
```

Q.9. WAP to count the divisors of the given number:

```c
//To count the divisors of the given number

#include<stdio.h>

void main()
{
        int num;
        printf("Enter the number:\n");
        scanf("%d",&num);
        int count=0;
        printf("Divisors of %d are:\n",num);
        for(int i=1;i<num;i++)
        {
                if(num%i==0)
                {
                        count++;
                        printf("%d\n",i);
                }
        }
        printf("There are %d divisors of %d\n",count,num);
}
```

Output:

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ vim ques9.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ cc ques9.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter the number:
16
Divisors of 16 are:
1
2
4
8
There are 4 divisors of 16
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$
```

Q.10. WAP to take two characters and print them as it is if they are equal and print their difference if they are unequal:

```c
//Two characters if equal print as it is an if unequal print their diff.

#include<stdio.h>

void main()
{
        char var1,var2;
        printf("Enter the two character:\n");
        scanf("%c %c",&var1,&var2);
        if(var1==var2)
        {
                printf("Var1=%c and Var2=%c\n",var1,var2);
        }
        else
        {
                int diff;
                if(var1<var2)
                {
                        diff=var2-var1;
                }
                if(var2<var1)
                {
                        diff=var1-var2;
                }
                printf("The difference between %c and %c is %d\n",var1,var2,diff);
        }
}
```

Output:

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter the two character:
p p
Var1=p and Var2=p
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$ ./a.out
Enter the two character:
a p
The difference between a and p is 15
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/Practical01$
```