DAY 5 – DAILY ASSIGNMENTS

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1. WAP to check for a valid traingle.

```c
#include<stdio.h>

int main()
{
    int a ,b,c;
    printf("enter side one:");
    scanf("%d",&a);
    printf("enter side two:");
    scanf("%d",&b);
    printf("enter side three:");
    scanf("%d",&c);

    if(a+b >c &&  a+c > b && b+c > a)
       printf("valid triangle\n");
    printf("over");

}
```

```
PS D:\c progrms coding> .\a
enter side one:3
enter side two:4
enter side three:5
valid triangle
over
PS D:\c progrms coding>
```

2. WAP to check if a character is an Alphabet.

```c
#include<stdio.h>

int main()
{
    char ch;
    printf("enter alphabet:");
    scanf("%c",&ch);

    if((ch>='A' && ch<= 'Z') || ( ch>='a' && ch<='z'))
       printf("alpabet\n",ch);
    printf("over");

    return 0;
}
```

```
PS D:\c progrms coding> gcc if4ass.c
PS D:\c progrms coding> .\a
enter alphabet:A
alpabet
over
PS D:\c progrms coding>
```

3. WAP to check if a Year is a leap Year.

```c
#include<stdio.h>

int main()
{
    int no;
    printf("enter no:");
    scanf("%d",&no);

    if(no % 4==0)
       printf("leap year\n");
    printf("over");

    return 0;
}
```

```
PS D:\c progrms coding> .\a
enter no:2024
leap year
over
PS D:\c progrms coding>
```

4. WAP to check if a number is divisible by 3.

```c
#include<stdio.h>

int main()
{
    int no;
    printf("enter no:");
    scanf("%d",&no);

    if(no % 3==0)
       printf("divisible \n");
    printf("over");
    return 0;
}
```

```
PS D:\c progrms coding> gcc if6ass.
PS D:\c progrms coding> .\a
enter no:6
divisible
over
PS D:\c progrms coding>
```

5. WAP to check for Uppercase Characters.

```c
ss.c > main()
#include<stdio.h>

int main()
{
    char ch;

    printf("enter char:");
    scanf("%c",&ch);

    if(ch >= 'A' || ch<='Z')
       printf("uppercase \n");
    printf("over");
    return 0;

}
```

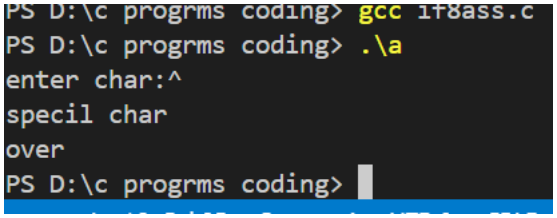
```
PS D:\c progrms coding> gcc if7ass.c
PS D:\c progrms coding> .\a
enter char:A
uppercase
over
PS D:\c progrms coding>
```

6. WAP to check for Special character.

```c
#include<stdio.h>

int main()
{
    char ch;
    printf("enter char:");
    scanf("%c",&ch);

    if((ch <'A' || ch>'Z')&& (ch<'a' || ch>'z' )
       printf("specil char \n");
    printf("over");
    return 0;
}
```



7. In this challenge, you are to create a C program that calculates your weekly pay.

•The program should ask the user to enter the number of hours worked in a week via the keyboard

•The program should display as output the gross pay, the taxes, and the net pay

•The following assumptions should be made:

Basic pay rate = $12.00/hr

Overtime (in excess of 40 hours) = time and a half

•Tax rate:

15% of the first $300

20% of the next $150

25% of the rest

-You will need to utilize if/else statements

```c
#include<stdio.h>

int main()
{
    float hr_wrk,gros_pay,net_pay,taxes;
    float basic_pay=12.0;
    float overtime_pay =1.5 * basic_pay;
    float base_hr=40.0;

    printf("enter no of hrs wrk in week:");
    scanf("%f",&hr_wrk);

    if(hr_wrk> base_hr)
    {
        gros_pay=(base_hr * basic_pay) + ((hr_wrk - base_hr) * overtime_pay);
    }
    else{
        gros_pay=hr_wrk * basic_pay;
    }

    if (gros_pay <=300) {
        taxes = gros_pay *0.15;

    } else if(gros_pay <=450)
    {
        taxes = (300 * 0.15) + ((gros_pay - 300) * 0.20);
    }
    else{
        taxes = (300 * 0.15) + (150 * 0.20) + ((gros_pay - 450) * 0.25);
```

```c
else{
    taxes = (300 * 0.15) + (150 * 0.20) + ((gros_pay - 450) * 0.25);

net_pay=gros_pay-taxes;
printf("gross pay:$%.2f\n",gros_pay);
printf("taxes:$%.2f\n",taxes);
printf("net pay:$%.2f",net_pay);
return 0;
```

```
enter no of hrs wrk in week:50
gross pay:$660.00
taxes:$127.50
gross pay:$660.00
taxes:$127.50
net pay:$532.50
PS D:\c progrms coding>
```

8. WAP to calculate the electricity bill based on the formula mentioned below

Calculations

To calculate your electricity bill, follow these steps:

Watts = (amps) x (volts)

Kilowatt-hours = (watts) x (usage) / 1000.

Cost = (kilowatt-hours) x (electricity rate)

Subtract the current meter reading from the previous month's reading to find the energy consumption.

. Multiply the units consumed by the per-unit charges based on the applicable slabs (e.g., Rs. 4.22 for 1-100 units,

Rs. 5.02 for 101-200 units).

. Add the fixed charge and energy duty (e.g., Rs. 40 fixed charge and Rs. 0.15 per unit) to the energy charges.

The sum of the energy charges, fixed charge, and energy duty gives you the total bill amount.

```c
#include<stdio.h>

int main()
{
    float amps,volts,use_hr,ele_rate;
    int pre_read,current_read;
    float watts,kilowatt_hr,total_charge,fixed_charge,energy_duty;
    float total_bill;

    int unit_consume;
```

```c
int main()
{
    float amps,volts,use_hr,ele_rate;
    int pre_read,current_read;
    float watts,kilowatt_hr,total_charge,fixed_charge,energy_
    float total_bill;

    int unit_consume;

    printf("enter currnt reading: ");
    scanf("%d",&current_read);
    printf("enter previous read:");
    scanf("%d",&pre_read);
    printf("enter electricity rate:");
    scanf("%f",&ele_rate);
    printf("enter amps:");
    scanf("%f",&amps);
    printf("enter volts:");
    scanf("%f",&volts);
    printf("enter usage hr:");
    scanf("%f",&use_hr);



    printf("enter fixed charge:");
    scanf("%f",&fixed_charge);
    printf("enter energy duty:");
    scanf("%f",&energy_duty);
```

```c
printf("enter currnt reading: ");
scanf("%d",&current_read);
printf("enter previous read:");
scanf("%d",&pre_read);
printf("enter electricity rate:");
scanf("%f",&ele_rate);
printf("enter amps:");
scanf("%f",&amps);
printf("enter volts:");
scanf("%f",&volts);
printf("enter usage hr:");
scanf("%f",&use_hr);



printf("enter fixed charge:");
scanf("%f",&fixed_charge);
printf("enter energy duty:");
scanf("%f",&energy_duty);

watts=amps*volts;
kilowatt_hr=(watts*use_hr)/1000;

unit_consume=current_read - pre_read;

  if (unit_consume <= 100) {
    total_charge = unit_consume * 4.22;
```

```c
printf("enter fixed charge:");
scanf("%f",&fixed_charge);
printf("enter energy duty:");
scanf("%f",&energy_duty);

watts=amps*volts;
kilowatt_hr=(watts*use_hr)/1000;

unit_consume=current_read - pre_read;

  if (unit_consume <= 100) {
    total_charge = unit_consume * 4.22;
} else if (unit_consume <= 200) {
    total_charge = (100 * 4.22) + ((unit_consume - 100) * 5.02);
} else {
    total_charge = (100 * 4.22) + (100 * 5.02) + ((unit_consume - 200) * 5.50);
}
total_bill = total_charge + fixed_charge + (unit_consume * energy_duty);
printf("Total electricity : Rs. %.2f\n", total_bill);
return 0;
```

```
PS D:\c progrms coding> gcc ifex3ass.c
PS D:\c progrms coding> .\a
enter currnt reading: 1200
enter previous read:1000
enter electricity rate:5.50
enter amps:10
enter electricity rate:5.50
enter amps:10
enter volts:220
enter volts:220
enter usage hr:8
enter fixed charge:40
enter energy duty:0.15
enter usage hr:8
enter fixed charge:40
enter energy duty:0.15
enter fixed charge:40
enter energy duty:0.15
enter energy duty:0.15
Total electricity : Rs. 994.00
PS D:\c progrms coding>
```

9.WAP using switch case for calculator

when you press Addition of two numbers

when you press Substarction of two numbers

when you press Multiplication of two numbers

when you press / Division of two numbers

when you press % Modulo operation should happen

```c
#include<stdio.h>

int main()
{
int a,b;
char op;
printf("enter op:");
scanf(" %c", &op);
printf("enter two num:");
scanf("%d %d",&a,&b);

switch(op) {

    case '+':
        printf("add two num=%d\n",a+b);
        break;

    case '-':
        printf("sub two num=%d\n",a-b);
        break;
    case '*':
        printf("mul two num=%d\n",a*b);
        break;
    case '/':
       if(b!=0)
       {
         printf("div two num=%d\n",a/b);
       }
       else
```

```
    {
      printf("div two num=%d\n",a/b);
    }
    else
    {
      printf("error\n");
    }
    break;
 default:
      printf("invalid op");
```

(char [11])"invalid op"

```
PS D:\c progrms coding> .\a
enter op:+
enter two num:3
4
add two num=7
PS D:\c progrms coding>
```

10. WAP to print factorial of a number.

```
#include<stdio.h>

int main(){
    int num,fact=1,i=1;

    printf("enter no:");
    scanf("%d",&num);

    while(i<=num)
    {
      fact*=i;
      i++;
    }
    printf("factof %d is=%d\n",num,fact);
    return 0;

}
```

```
S D:\c progrms coding> gcc whileass.c
S D:\c progrms coding> .\a
nter no:4
actof 4 is=24
S D:\c progrms coding>
```

11.WAP to check whether the number is Prime or not.

```c
#include <stdio.h>

int main() {
    int num, i = 2;

    printf("Enter a positive integer: ");
    scanf("%d", &num);

    if (num <= 1) {
        printf("%d is not a prime number.\n", num);
    } else {
        while (i <= num / 2) {
            if (num % i == 0) {
                printf("%d is not a prime number.\n", num);
                return 0;
            }
            i++;
        }

        printf("%d is a prime number.\n", num);
    }

    return 0;
}
```

```
PS D:\c progrms coding> .\a
Enter a positive integer: 3
3 is a prime number.
PS D:\c progrms coding>
```

12.. WAP to print lower case alphabets.

```c
#include <stdio.h>

int main() {
    char letter = 'a';

    printf("Lowercase alphabets:\n");
    while (letter <= 'z') {
        printf("%c ", letter);
        letter++;
    }

    printf("\n");
    return 0;
}
```

```
PS D:\c progrms coding> gcc whiileass3.c
PS D:\c progrms coding> .\a
Lowercase alphabets:
a b c d e f g h i j k l m n o p q r s t u v w x y z
PS D:\c progrms coding>
```

13.WAP to print Fibonacci Series up to a Given Number.

```c
#include <stdio.h>

int main() {
    int lim, fir = 0, seco = 1, next = 0;

    printf("Enter the limit: ");
    scanf("%d", &lim);

    printf("Fibonacci Series up to %d:\n", lim);

    while (next <= lim) {
        printf("%d ", next);
        fir = seco;
        seco = next;
        next = fir + seco;
    }

    printf("\n");
    return 0;
}
```

```
Enter the limit: 4
Fibonacci Series up to 4:
Fibonacci Series up to 4:
0 1 1 2 3
PS D:\c progrms coding>
```

14.count the given numbers using while

```c
#include<stdio.h>
int main()
{
    int i,count=0;
    printf("enter no:");
    scanf("%d",&i);

    while(i!=0)
    {
        i=i/10;
        count++;
    }
    printf("count=%d\n",count);
    return 0;

}
```

```
PS D:\c progrms coding> gcc while2
PS D:\c progrms coding> .\a
enter no:12345
count=5
PS D:\c progrms coding> gcc whilea
```

15. 1. WAP to determine the grade of a student based on follwoing

Grade A marks> 90

Grade B marks >80 and marks <90

Grade C marks>-70 and marks <80

Grade D marks >-60 and marks <70

Grade F marks <60

```c
//comparison:>
//statement:if else if
//variables:1
//dat type:int
//scope:loacl

#include<stdio.h>

int main()
{
    int mark;
    printf("enter marks:");
    scanf("%d",&mark);

    if(mark<0)
    {
    printf("invalid\n");}

    else
    if (mark >=90)
    {
        printf("grage A\n");
    }
    else if(mark >=80 && mark <90)
    {
        printf("grade B\n");
        }
    else if(mark >=70 && mark < 80)
    {
```

```c
    else
    if (mark >=90)
    {
        printf("grage A\n");
    }
    else if(mark >=80 && mark <90)
    {
        printf("grade B\n");
        }
    else if(mark >=70 && mark < 80)
    {
        printf("grade C\n");
    }
    else
    if (mark>=60 && mark <70)
    {
        printf("grade D\n");
    }
    else
    {
        printf("grade F\n");
    }
}
```

```
PS D:\c progrms coding> gcc ifexer2.c
PS D:\c progrms coding> .\a
enter marks:45
grade F
PS D:\c progrms coding>
```

16.largest among three numbers using if else

```c
//input:i,j,k
//comparison:>
//statement:if..else..if
//varible:3
//datatype:int
//scope:local

#include<stdio.h>

int main()
{
    int i,j,k;
    printf("enter numbers:");
    scanf("%d %d %d", &i, &j , &k);

    if (i> j && i> k){
       printf(" largestt i=%d\n",i);
    }
    else

        if(j>i && j>k)
        {
           printf("largest j=%d\n",j);

    }
    else
    {
        printf("largest k=%d\n",k);
    }
```

```
PS D:\c progrms coding> gcc ifexer1.c
PS D:\c progrms coding> .\a
enter numbers:4
1
8
largest k=8
PS D:\c progrms coding>
```