Lab 2

Due: lab 2 will be due Friday Sep 13th

We will first conduct a series of *warmup exercises*, build a project called warmup2. Insert a new source file called ***warmup2.c***.

In these warmup exercises we will practice inputting and outputting.
- We will declare identifiers of various data types and input data. We will experiment with data types **float, int, char**
- Exercises include declaring initializing, inputting and outputting using various **width**, **precision,** justifications and **flags**.

```c
int x,y;

float f,g;

        printf("***%5d***\n", 23);
        printf("***%-5d***\n", 23);
        printf("***%05d***\n", 23);
        printf("***%+5d***\n", 23);
        printf("***%-+5d***\n", 23);
        printf("***%+5d***\n", -35);
        printf("***%-+5d***\n", -35);
        printf("***%5.2f***\n", 23.234567);
        printf("***%05.2f***\n", 23.234567);
        printf("***%-5.2f***\n", 23.234567);

        x=321;
        y=219;

        printf("***%+5d***\n", x);
        printf("***%-+5d***\n", y);

        f=12.193;
        g=-213.4056;

        printf("***%5.2f***\n", f);
        printf("***%05.2f***\n", g);
        printf("***%-5.2f***\n", g);

        printf("***%-20.2f%-10.2f***\n", f,g);
```

- Introduction of char data type and conversion specifier %c

```c
        char Y,P;

        Y='G';
        P=23;
        printf("***%c***\n", Y);
        printf("***%5c***\n", P);
        printf("***%-5c***\n", P);
```

- We will input data using **scanf,** perform some arithmetic operations, and output the results using printf. Follow the lab instructor instructions concerning the exercises.
- Introduction of the string format specifier %s

```
printf("hello world\n");
printf("%s\n", "hello world");
printf("***%s***\n", "hello world");
printf("***%-s***\n", "hello world");
printf("***%20s***\n", "hello world");
printf("***%-20s***\n", "hello world");

printf("***%-20s%-10s***\n", "hello world", "pizza");
printf("***%-20.2f%-10.2f***\n", f,f+10);
```

- Scanf reading exercise

```
scanf("%c%c", &ch1, &ch2);
enter a e
```
display ch1 and ch2 (as characters then their ascii values)

- **Note that there is a space between two specifiers in scanf**

```
scanf("%c %c", &ch1, &ch2);
enter a e
```
display ch1 and ch2 (as characters then their ascii values)

```
scanf ("%3d", &num);
enter 23456
```
now display num
```
scanf ("%c", &ch1);
```
now display ch1

LAB 2

Three individuals Sam, Sara, and Daniel work at *a Company*.
You are part of the payroll department. Each employee has a salary, number of dependents (including themselves). The employee's deduction is a function of the **number of dependents**, the **employee's health insurance contribution** and the federal tax will be functions of the salary. You are to write a program which will

Prompt the user to enter a salary for the employees and their dependents.

From the inputs you should compute Sam's deduction, health insurance contribution, federal tax and take home pay and output it in a formal manner as illustrated below. Next you should compute Sara's deduction, health insurance contribution, federal tax and take home pay and output it in a formal manner as illustrated below. Next you should compute Daniel's deduction, health insurance contribution, federal tax and take home pay and output it in a formal manner as illustrated below. Lastly you should output the totals of each category data should be aligned (left justified)

The deduction is equal to 250.00*no. of dependents
The health insurance contribution is 10*(per hundred dollars of salary, print two decimal places)
The fed tax is 30% of (salary –deduction –health ins contribution)
Take home pay = salary -- fed tax-- health ins contribution

Format all output in columns. Align columns (L) using width in the printf function DO NOT USE TAB

Note your calculation may have round-off error. For this lab you are not responsible for ensuring correctness concerning round-off error

Example

Name	no. dept	salary	deduction	health cont	fed tax	take home pay
Sam	3	32870.21	750.00	3287.02	8649.95	20933.24
Sara	2	34512.30	500.00	3451.23	9168.32	21892.75
Total	x	xxxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxxx