# CL1002 – Programming Fundamentals Lab

# Assignment # 01

**Note:**

- Submit a pdf file containing all of your C code with all possible screenshots of every task output on Google Classroom.
- Copied tasks will be awarded **zero** marks without any investigation.
- Comments you code properly.
- Note that these assignment marks could be graded through a viva (quiz) in the lab.
- Please submit your file in this format (roll-no-name) i.e (22P-8743-Zain.pdf).

## Problem: 1

Celsius to Fahrenheit and vice versa

Write a program to enter temperature in Celsius and convert it into

Fahrenheit and vice versa.

$$°F = \left(°C * \frac{9}{5}\right) + 32 \qquad °C = (°F - 32) * \frac{5}{9}$$

## Problem: 2

Check whether a year is leap year or not?
Write a C program that ask user to input year, determines
whether the year is a leap year. A year is a leap year if it is divisible by 4, but is not divisible by 100 except when divisible by 400. (The year 2000 was a leap year.)
*Hint :(use conditional statements)*

For example,
• 1999 is not a leap year
• 2000 is a leap year
• 2004 is a leap year
• 1000 is not a leap year

## Problem: 3

Write a program that prompts the user to enter the total number of cookies, the number of cookies in a box, and the number of cookie boxes in a container. The program then outputs the number of Boxes and the number of containers to ship the cookies. Note that each box must contain the specified number of cookies, and each container must contain the specified number of boxes.
If the last box of cookies contains less than the number of specified cookies, you can discard it and output the number of leftover cookies. Similarly, if the last container contains less than the number of specified boxes, you can discard it and output the number of leftover boxes.

## Problem: 4

The following table contains earthquake magnitude ranges on the Richter scale and their descriptors:

| Magnitude | Descriptor |
|---|---|
| Less than 2.0 | Micro |
| 2.0 to less than 3.0 | Very minor |
| 3.0 to less than 4.0 | Minor |
| 4.0 to less than 5.0 | Light |
| 5.0 to less than 6.0 | Moderate |
| 6.0 to less than 7.0 | Strong |
| 7.0 to less than 8.0 | Major |
| 8.0 to less than 10.0 | Great |
| 10.0 or more | Meteoric |

Write a program that reads a magnitude from the user and displays the appropriate descriptor as part of a meaningful message. For example, if the

user enters 5.5 then your program should indicate that a magnitude 5.5 earthquake is considered to be a moderate earthquake.

## Problem: 5

Write a program that examines three variables—x, y, and z—and prints the largest odd number among them. If none of them are odd, it should print a message to that effect.

Note: You have to take three values from user.

**Sample Output:**

```
Enter an number
x:5
Enter a second number
y:13
Enter a third number
z:7
13  is the greatest odd number among them.
```

```
Enter an number
x:7
Enter a second number
y:7
Enter a third number
z:7
7  is the greatest odd number among them.
```

```
Enter an number
x:4
Enter a second number
y:3
Enter a third number
z:10
3  is the greatest odd number among them.
```

```
Enter an number
x:4
Enter a second number
y:6
Enter a third number
z:8
None of them is odd
```

## Problem: 6

Write a C program to check whether an alphabet is a vowel or consonant. Your program should ask the **user to input an alphabet**

VOWELS ARE (A,E,I,O,U)

**Output**

```
Enter Alphabet:d
alphabet is a consonant
```

## Problem: 7

Write a program to ask a user to enter the date of birth and on the basis of input it display astrological sign associate with it.

| | | |
|---|---|---|
| ♈ | Aries, head . . . . . **ARI** | *Mar. 21–Apr. 20* |
| ♉ | Taurus, neck. . . . . **TAU** | *Apr. 21–May 20* |
| ♊ | Gemini, arms . . . **GEM** | *May 21–June 20* |
| ♋ | Cancer, breast. . . . **CAN** | *June 21–July 22* |
| ♌ | Leo, heart . . . . . **LEO** | *July 23–Aug. 22* |
| ♍ | Virgo, belly . . . . . **VIR** | *Aug. 23–Sept. 22* |
| ♎ | Libra, reins. . . . . **LIB** | *Sept. 23–Oct. 22* |
| ♏ | Scorpio, secrets. . . **SCO** | *Oct. 23–Nov. 22* |
| ♐ | Sagittarius, thighs . **SAG** | *Nov. 23–Dec. 21* |
| ♑ | Capricorn, knees . **CAP** | *Dec. 22–Jan. 19* |
| ♒ | Aquarius, legs . . **AQU** | *Jan. 20–Feb. 19* |
| ♓ | Pisces, feet . . . . . **PSC** | *Feb. 20–Mar. 20* |

Expected Output:

Input birthday: 15

Input month of birth (e.g. march, july etc): may

Your Astrological sign is : Taurus