

## Practice S07P01: Triangle Centroid

[http://www.comp.nus.edu.sg/~cs1010/4\\_misc/practice.html](http://www.comp.nus.edu.sg/~cs1010/4_misc/practice.html)

**Week of release:** Week 8

**Objective:** Function with pointer parameters

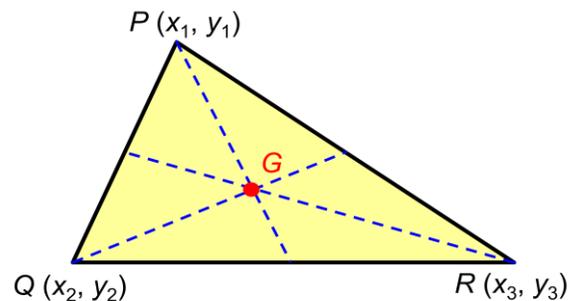
(**Note:** After structures is covered, you may attempt this exercise again using structures.)

### Task statement:

In a triangle, a *median* is a line that connects a vertex to the midpoint of its opposite side. The intersection of the 3 medians is called the *centroid*.

In the diagram on the right, the medians are shown as blue dotted lines, and point *G* is the centroid.

Write a program `triangleCentroid.c` to read in the coordinates (of type `float`) of 3 vertices of a triangle and compute the coordinates of its centroid.



Your program should contain a function `centroid()`. You are to decide on its parameters. The function is to pass back the coordinates of the centroid via two address parameters.

There should be no `printf()` statement in your `centroid()` function.

### Sample runs:

```
Coordinates of 1st vertex: 0 0
Coordinates of 2nd vertex: 0 1
Coordinates of 3rd vertex: 1 1
Coordinates of centroid = (0.33, 0.67)
```

```
Coordinates of 1st vertex: 4.8 12.7
Coordinates of 2nd vertex: -12.3 8.2
Coordinates of 3rd vertex: -5.6 15.3
Coordinates of centroid = (-4.37, 12.07)
```