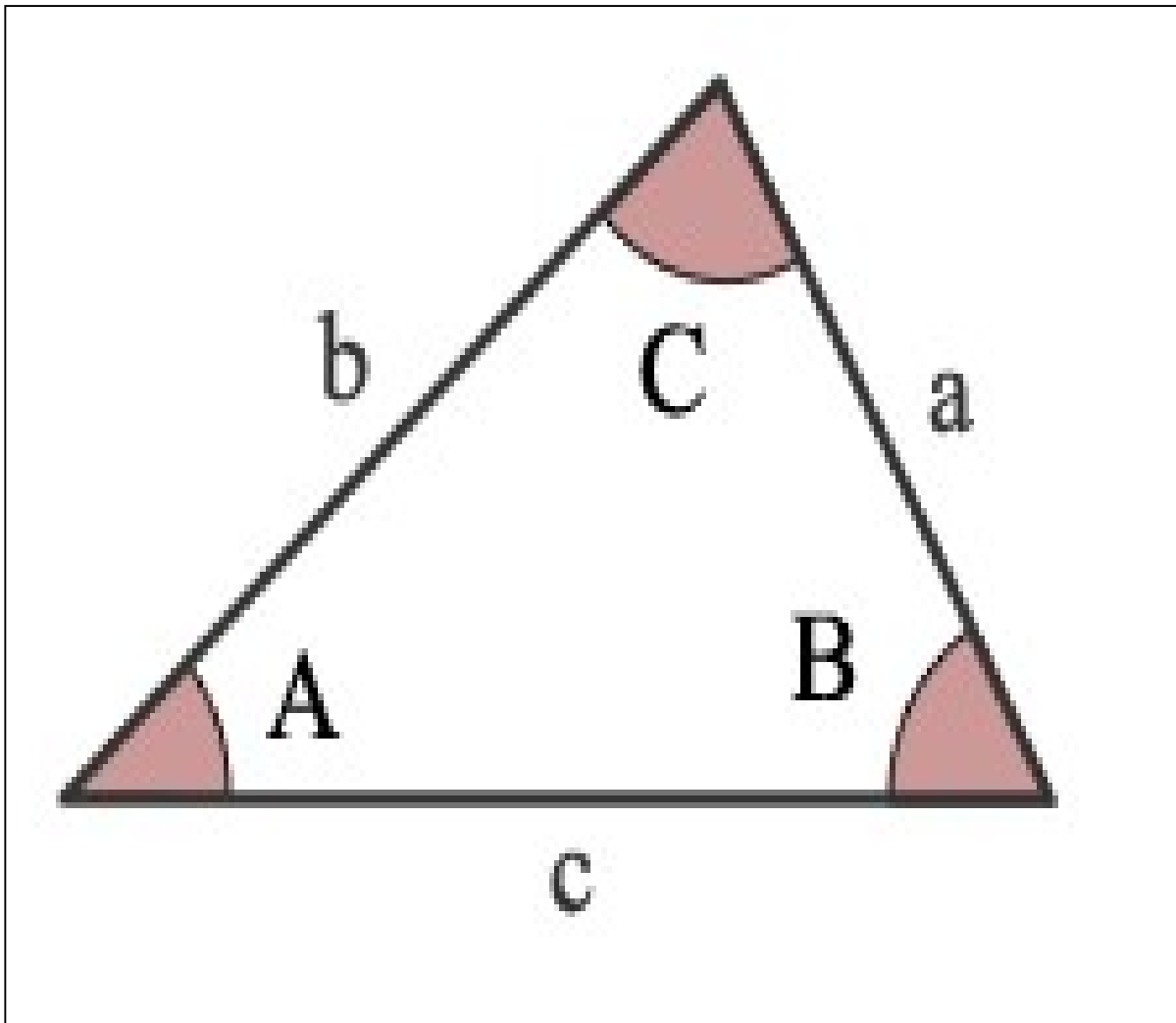# Department of Networks

First Year

Problem Solving and Programming 1

Review

- **Example 1:** Write a C++ program to enter three angles of a triangle and check whether triangle is valid or not (Hint: summation of triangle angles = 180)

```
                          Start

                  Input first angle a1

                  Input second angle a2

                  Input third angle a3

                   sum = a1 + a2 +a3

          No          sum==          Yes
                      180?

    output "Not Valid"              output "Valid"

                          End
```
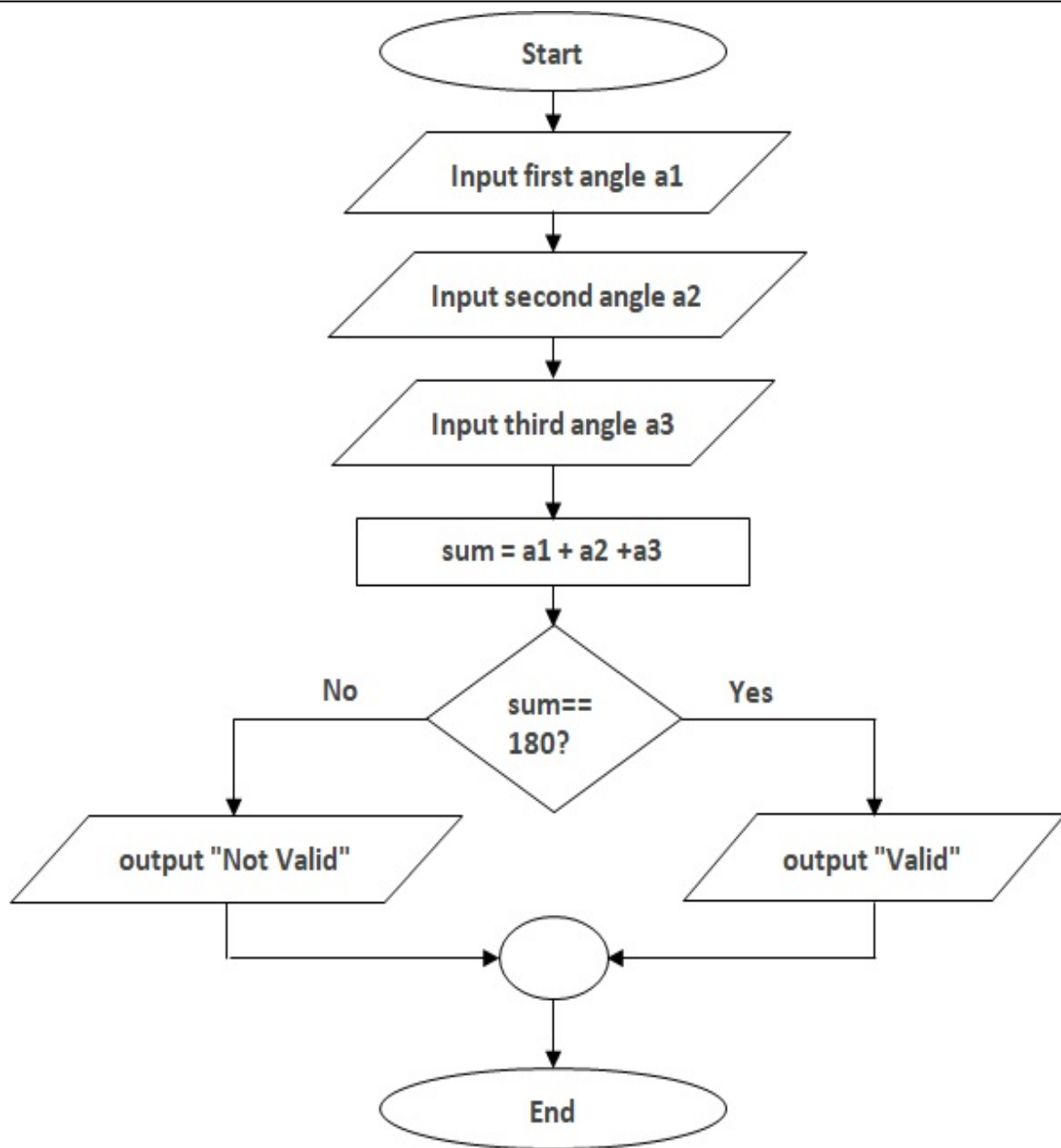
- **Example 2:** Write a C++ program to enter a point (x,y) and determine in which quadrant the coordinate point lies. (Example: input 6 2 output: first quadrant)

```
                          ┌──────────────┐
                          │    Start     │
                          └──────┬───────┘
                                 │
                                 ▼
                          ╱──────────────╲
                          │   Input x,y   │
                          ╲──────────────╱
                                 │
                                 ▼
          No              ◇ x>0 and ◇            Yes
      ┌────────────────── ◇  y>0?  ◇ ──────────────────┐
      │                   ◇        ◇                     │
      ▼                                                  ▼
 ◇ x<0 and ◇   Yes                             ╱──────────────────╲
 ◇  y>0?   ◇ ──────┐                           │     Output        │
 ◇        ◇        │                           │  "First Quadrant" │
      │No          ▼                           ╲──────────────────╱
      │       ╱──────────────────╲                       │
      ▼       │     Output        │                      │
 ◇ x<0 and ◇  │  "Second Quadrant"│                      │
 ◇  y<0?   ◇  ╲──────────────────╱                       │
 ◇        ◇        Yes    │                               │
      │No  └──────────┐   │                               │
      ▼               ▼                                   │
 ◇ x>0 and ◇   Yes  ╱──────────────────╲                 │
 ◇  y<0?   ◇ ─────  │     Output        │                 │
 ◇        ◇         │  "Third Quadrant" │                 │
      │No           ╲──────────────────╱                  │
      │                     │                             │
      │        ╱──────────────────╲                       │
      │        │     Output        │                      │
      │        │  "Fourth Quadrant"│                      │
      │        ╲──────────────────╱                       │
      │                 │                                 │
      └──────────────►  ◯  ◄──────────────────────────────┘
                        │
                        ▼
                 ┌──────────────┐
                 │     End      │
                 └──────────────┘
```