Lab 6 If-Else

Introduction to Computer Science I

# Objectives:

After performing this lab, the students should be able to

* illustrate conditionals using flow charts
* write C++ programs that involve if-else statements

# Names of Lab Group Members:

## Activity

Directions: For each programming exercise, provide your C++ source code and screenshot of your program output.

### Part I – Flow Charts

Flow charts can be used to illustrate execution of different actions based on a set of conditions. In a flow chart, a diamond is used to represent a condition, and a rectangle is used to represent an action / branch. For example, here is a flow chart illustrating how Sheldon decides on his evening plan:

etc.

true

Thursday

Pizza

false

false

false

true

Halo

true

true

Wednesday

Barbecue bacon cheeseburger

Tuesday

Thai Food

Monday

1. **Create a flowchart showing available paths to U.S. citizenship. For simplicity, assume that a person is eligible for U.S. citizenship if the person**
   1. **has a parent who is a U.S. citizen, or**
   2. **is a green card holder of at least 5 years, or**
   3. **is a green card holders married to U.S. citizens, or**
   4. **is green card holders in the military and their family**
2. **Create a flowchart illustrating how a triangle can be determined as equilateral (three equal sides), isosceles (exactly two equal sides), and scalene (no equal sides), given the lengths of the three sides.**

### Part II – If-Else

1. **Write a program that reads in three floating-point numbers and prints the smallest of the three inputs.**
2. **Write a program that prints all solutions to the quadratic equation . The program should ask the user for a, b, and c and use the quadratic formula to find the solutions. If the discriminant is negative, display the imaginary solutions in the form of , where *u* and *v* are both real numbers and .**