**Control Flow Statements**

* Which code executes when, how often, and whether or not it repeats

Imperative Programming Process

* Procedural. Step by Step
* Most typical – Java, Python, C, etc

Declarative Programming

* Described what it is
* SQL

Conditional Statement

* If/Else, And/Or
* Allow for different branches of code
* Overuse of conditional can result in poor code

Loops and Iterators

* Executed multiple times in succession

Functions and Methods

* Functions – A block of code that is assigned a symbol
* Methods – Functions Defined as part of a class and invoked by instances of that class

Why Use Object-Oriented Programming (OOP)

* Architectural style supported by many programming languages
* The key component of OOP is the objects which are instances of a class
* Objects can be destroyed, created, and manipulated in isolation from one another
* It is legible, testable, can be debug, and maintainable

Class state and behavior

* Class is like a blueprint
* Instances of that class are objects
* Each object can have different properties

Understanding Design Patterns

* Singleton Design Pattern
  + Very simple
  + A way to create a single object that is shared among other objects
  + A pattern that restricts classes to only being instantiated once during execution of the program
  + Think static IP address and why we use it
* Observer Design Pattern
  + A pattern where dependent objects are updated or notified by one or more subject objects
  + Two classes defined
    - Subject – maintains a list of observers and includes methods for attaching, detaching, and notifying observers
    - Observer – has a method to receive updates from subject
  + Used for event updater
* Model View Controller
  + High level abstraction where responsibilities are divided up into three loosely coupled components
  + The three components
    - Model – The component that stores data
    - View – The component that displays data
    - Controller – Handles logic flow, user interactions, and direct models and views