Classes: Read chapter 2

Functional decomposition- technique for developing a program in which the problem is divided into more easily handled sub problems.

Object oriented design- a technique for developing a program in which the solution is expressed in the terms of objects. Self-contained entities composed of data and operation on that data.

Differences

Functional decomposition- views a program as a collection of cooperating objects

Object oriented design- views a program as a collection of cooperating objects.

Abstract data type

An object

* Has a state which is described by attributes.
* Has behavior which is defined through methods.
* Has an identity which is a name

Example object: Door

Attributes: push or pull, locked or not, glass or wood

Behaviors: open and close

Identity: choosing a door, is it open or closed? Is it locked?

Object oriented programming(OOP)

OOP- models real world objects with software counterparts

Takes advantage of class relationships:

* Objects of a certain class have common characteristics
* Example class: vehicles

Characteristics

* Abstractions- finding the important pieces
* Inheritance- upgrading the class, using old classes to help build your new one
* Information hiding- private doesn’t work in python

Classes and objects

* A class is a definition of a feneral tpe of object (attributes and methods)
* An object is an instance of a class (an object is created the same way a variable is declared)

Analogies

* Houses- class is a blueprint. Object is an house built by the blueprint