

Notes

CSC144 Software Architecture

19 March 2018

- open-source—anyone can view code that the programmers wrote, suggest improvements, customize
- Linux—free, open source operating system
- operating system—foundation on which all other software runs (manager, referee, provides services to other programs)
- mark-up languages—mix directions for computer and words that we want our audience to see in the same file
- Java
 - date of birth: May, 1995
 - parents: James Gosling and team at Sun Microsystems
 - current owner: Oracle
 - first widely adopted language that was designed from the start to support the object-oriented discipline
- characteristics of object-oriented languages
 - encapsulation—my teammates do not need to see everything that I am doing!
 - polymorphism—several related classes might methods with the same name, computer “knows” which method to use (if a Rectangle class and a Circle class both inherit from a Shape class and all have area() methods, computer will know which version of area() to use)
 - inheritance—I should not have to re-invent the wheel (a WorkStudyStudent class gets all of the features of a Student class automatically, so I do not have to again say that WorkStudyStudents have first names)
- why object-oriented programming?
 - more concise—less re-inventing the wheel

- a class is a reusable component—can now build programs by selecting pre-built components from a catalog
 - re-usable components are more reliable—they have been tested by others
 - better organization makes these programs easier to understand (by me, by my current teammates, by my future teammates)
- stub methods—does not produce mathematically or logically correct answer, a place-holder that let's us work on other parts of the program until we are ready to return to the incomplete stub method (and finish defining it)