Content Objective: Students will analyze/develop programs that instantiate objects from classes with data and methods.

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| **On the Tech Horizon (10pts.)**  **link to a tech/coding related article or journal no more than one month old (no blogs or reddit clones see below)** | |
| Course Discussion: | https://msdn.microsoft.com/en-us/magazine/mt842499 |
| Reaction/Commentary: | I completely agree with Annabelle Rose, the software developed for students could be made to be much more useful and user friendly for both students and teachers. |

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| **Tech Terms and History (20pts.)**  **vocabulary and applicable backstory (definition/commentary in your words)** | |
| Transistor | Has three layers of semiconducting material that allows it to regulate the voltage flow |
| Moore’s Law | The amount of transistors per a square inch that can be put on an integrated circuit has doubled each year since they were invented. |
| Cybernetics | The science of the communication between machines and other machines and between machines and people |
| Data in Sciences (list) | Information that has been collected |
| Quebit | A quantum bit, a basic unit of information in a quantum computer |
| What can be done to data… | It can be stored, transferred, deleted, compressed, moved, or graphed. |
| Abstraction | A technique for arranging complexity of computer systems. It establishes level for the user to interact with, by suppressing the more complex details at a lower level. |
| Bit: by itself, means…? | A bit by itself means either 0 or 1, so it is basically a yes or no. |
| Bootstrap | The first piece of code that runs when machine starts and is responsible for loading the rest of the operating system. It is a operating system that pulls itself up by the bootstraps |
| Morse Code | A code that consists of long and short signals of either light or sound |
| One bit can mean…? | It is a binary digit that can have one of two values, zero or one, true or false, on or off. |
| ASCII | American Standard Code for Information Interchange. 128 possible characters with a combination of 7 bit(0’s or 1’s) |
| Unicode | An international encoding standard which requires languages and scripts to have the same unique numeric value assigns to symbols, letters, and numbers |
| Floating Point | For storing numbers in which the decimals do not line up |
| Class vs. Object | A class is a construct that defines a collection of properties and methods. |
| Method Arguments | Arguments are the data that gets passed into functions, also called methods |
| Interface | What the user interacts with in any application |
| Accessor | It retrieves data from a class that would normally be private |
| Mutator | A function that changes the value of a variable or the data in a object in a class |
| API | Application Software Interface, is a library of things an application can use to interact with other stuff |
| Package | A set of things put together, like related tools or classes |
| Object Reference | Describes as a pointer, they refer to an object |

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| **Code Snippets (30pts.)**  **only submit snippets no full programs (test and run in IDE, then copy/paste applicable code frag)** | |
| E2.6, E2.8, E2.10, E2.11, E2.12, E2.14, E2.15, E2.16 | E2.6  **public** **class** E6v2 {  **public** **static** **void** main(String[]args) {  System.***out***.println("Type anything you want!");  Scanner sc = **new** Scanner (System.***in***);  String words = sc.nextLine();  **int** max = words.length();  words = words.replace('o', '}');  words = words.replace('e', 'o');  words = words.replace('}', 'e');  System.***out***.println(words);  }  }  E2.8  **public** **class** BrighterDemo {  **public** **static** **void** main(String[] args) {  Color x = **new** Color(50,100,150);  System.***out***.println (x);  System.***out***.println (x.brighter());  }  }  E2.10  **public** **class** DarkerDemo {  **public** **static** **void** main(String []args) {  Color x = Color.***RED***;  System.***out***.println(x);  System.***out***.println(x.darker());  x = x.darker();  System.***out***.println(x.darker());  }  }  E2.11  **import** java.util.Random;  **public** **class** DieSimulator {  **public** **static** **void** main(String []args) {  Random r = **new** Random();  **int** n = r.nextInt(6)+1;  System.***out***.println(n);    }  }  E2.12**import** java.util.Random;  **public** **class** RandomPrice {  **public** **static** **void** main(String []args) {  Random r = **new** Random();  **float** n = (**float**) r.nextInt(1001)+1000;  System.***out***.println("$" + n/100);  }  }  E2.14  **public** **class** DayTester {  **public** **static** **void** main(String []args) {  Day d = **new** Day();  d.addDays(10);  System.***out***.println(d);  }  }  E2.15  **public** **class** HalfSizePicture {  **public** **static** **void** main(String []args) {  Picture p = **new** Picture();  p.load("/Users/9618856/Desktop/Programming 2/Chapter2/src/81.jpg");  **int** w = p.getWidth();  **int** h = p.getHeight();  p.scale(w/2, h/2);  p.move(w/4, h/4);  }  }  E2.16  **public** **class** DoubleSizePicture {  **public** **static** **void** main(String []args) {  Picture p = **new** Picture();  p.load("/Users/9618856/Desktop/Programming 2/Chapter2/src/81.jpg");  **int** w = p.getWidth();  **int** h = p.getHeight();  p.move(-w/4,-h/4);  p.scale(w\*2, h\*2);  }  } |
| P2.5 (only want the method to generate the number) |  |

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| **Code Challenge (30pts.)**  **full functioning application checked in to GitHub** | |
| Using the day class from the textbook online resources “worked example 1” create a gui app to do the following:  1. Ask user for first name 2. Ask user for birth date (to work with day class) 3. Ask the user how long they would like to live in years 4. Ask the user for average ounces of fluid consumed in a day (water, milk, juice, soda etc. combined) 5. Calculate how many 8,000 gallon tanker trucks the equivalent liquid would be. | |
| GitHub URL: | https://github.com/SkylineHigh/CSAdvanced/blob/master/Tanker/ChanelVG/TankerCalc.java |
| Notes: | Day class not used |

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| **Badge Progress (10pts.)**  **building your coding profile: Java coding training site to earn badges (recommended site** [**http://coderbyte.com**](http://coderbyte.com) **)** | |
| Screenshot/URL: |  |
| Notes/Issues: |  |

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| **Notes**  **your notes** | |
| Notes: |  |

Tech and Coding Magazines:

* <http://en.wikipedia.org/wiki/List_of_computer_magazines>
* <http://msdn.microsoft.com/en-us/magazine/default.aspx>
* <http://adtmag.com/Home.aspx>
* <http://www.javaworld.com>
* <http://visualstudiomagazine.com/Home.aspx>
* <http://www.pcmag.com>
* <http://applemagazine.com>
* <http://appdevelopermagazine.com>