Coding Challenge Learning Rubric

Score Levels	Content	Conventions	Organization	Presentation
4	• Is well thought out and supports the solution to the challenge or question • Reflects application of critical thinking • Has clear goal that is related to the topic • Is pulled from a variety of sources • Is accurate	• Using proper terminology to get point across to the audience • High-level use of vocabulary and word choice	• Information is clearly focused in an organized and thoughtful manner • Information is constructed in a logical pattern to support the solution	• Multimedia is used to clarify and illustrate the main points • Format enhances the content • Presentation captures audience attention • Presentation is organized and well laid out
3	• Is well thought out and supports the solution • Has application of critical thinking that is apparent • Has clear goal that is related to the topic • Is pulled from several sources • Is accurate	• Good use of vocabulary and word choice	• Information supports the solution to the challenge or question	• Multimedia is used to illustrate the main points • Format is appropriate for the content • Presentation captures audience attention • Presentation is well organized
2	• Supports the solution • Has application of critical thinking that is apparent • Has no clear goal • Is pulled from a limited number of sources • Has some factual errors or inconsistencies	• Low-level use of vocabulary and word choice	• Project has a focus but might stray from it at times • Information appears to have a pattern, but the pattern is not consistently carried out in the project • Information loosely supports the solution	• Multimedia loosely illustrates the main points • Format does not suit the content • Presentation does not capture audience attention • Presentation is loosely organized
1	• Provides inconsistent information for solution • Has no apparent application of critical thinking • Has no clear goal • Is pulled from few sources • Has significant factual errors, misconceptions, or misinterpretations	• Poor use of vocabulary and word choice	• Content is unfocused and haphazard • Information does not support the solution to the challenge or question • Information has no apparent pattern	• Presentation appears sloppy and/or unfinished • Multimedia is overused or underused • Format does not enhance content • Presentation has no clear organization

Learning Goals

A1 Demonstrate the ability to use different data types, including one-dimensional arrays, in computer programs

A2 Demonstrate the ability to use control structures and simple algorithms in computer programs

A3 Demonstrate the ability to use subprograms within computer programs

A4 use proper code maintenance techniques and conventions when creating computer programs

B1 Use a variety of problem solving strategies to solve different types of problems independently and as part of a team

B2 Design software solutions to meet a variety of challenges

B3 Design algorithms to specifications

B4 Apply a software development life-cycle model to a software development project

C3 Demonstrate an understanding of the software development process

D1 Describe policies that promote environmental stewardship and sustainability

D2 Describe Postsecondary Opportunities and career prospects related to computer studies.

Deliverables:

1. GitHub repo with
    a. A completed Wiki-page with references used in project
    b. A project tab that lists the tasks: to do, in progress, and completed.(at minimum)
    c. Issues tab used
    d. 3 individually distinct and working examples of the coding challenge with
        i. Pictures or Gifs in a viewable markdown file.(i.e. could be in the ReadMe.md file)
        ii. All code cleanly commented(i.e. program explanation at top, and comments for each function, and class(if necessary))
2. Slide show working through the steps of the coding challenge
    a. Introduction (i.e. showing the final product, and the creative direction that each of the three of you took)
    b. Set-up: Giving the audience time to get their necessary workflow ready(i.e. processing IDE ready, which language, external files needed, references to GitHub repo to share code with you, anything the audience might need before they begin)
    c. Minimum 3 steps to completing the challenge with tests (i.e. have three partially complete but testable codes saved on GitHub to test, you can write this live but you still need to have it stored on GitHub just in case you can't figure out what is wrong with your code)

    d. Explaining 1 computer science concepts from scratch. (i.e. what does the code do? Why does it work? How should a person think about it?)
    e. Explaining 1 mathematical concept “from scratch”. (i.e. what does the math do? How is it encoded in the program? Why is it interesting?)
    f. Creative Futures(i.e. interesting creative directions to inspire the audience)
3. Social Coding perspectives/Future directions
    a. Have participants share the code they create with you in your repository and show off their work, giving them credit.
        i. (Extra! If you do not feel comfortable having a social media presence you can skip this) Tweet your coding challenge at Daniel Shiffman(professor at NYT ITP) to let him know you are running one, and encourage your classmates to do the same expressing creative coding as an interesting and fundamental way to learn.
    b. Make a connection to:
        i. An emerging area of computer science research. (i.e. how could machine learning be used? Is there a field that might find this project interesting?)
        ii. Postsecondary education and career prospects. (i.e. how could this spur on more learning of computer science? What fundamentals did you touch upon that are essential for success at other levels of education and in the world in general?)