Interactive Project Assignment

As professional software engineers, we have an obligation to help prepare the next generation of software engineers as well as ensure that those who will pursue other careers have at least some familiarity with our field (as software is pervasive).

The objective of this assignment is to develop an interactive, hands-on activity aimed at teaching a specific concept from software engineering to children in the K-12 (kindergarten to 12th grade, age 5 – 18) age range. You will select an age range, a concept, a media for the activity, as well as learning outcomes and a method for assessing if the outcomes were met. You must develop the materials and/or handouts and instructions so that another software engineering professional or college level student could undertake your activity. A few examples follow:

* To teach kindergarten through 3rd graders about software testing, we explained a color guessing game to the students. We told them that we are users of software and that we can get companies to make their software better or more fun if we evaluate the software and give the company suggestions on how to make it better. The kids then played the game and made suggestions on how to improve the software. Learning outcomes: to understand user experience testing at an abstract level and how to provide experience reports. Evidence: the reports provided by the students. Products: handouts used to explain user experience testing and color guessing game, sample experience reports. Resources: color guessing game (code and .exe attached).
* To teach 6th – 8th graders about designing computer programs, we used the code.org tutorial on Flappy Bird. We explained to the students about basic design constructs such as variables, sequential constructs, conditional constructs, and looping constructs. We had the students play the tutorial and actually design programs. Learning outcomes: to understand basic design constructs. Evidence: the certificate earned by students when completing the tutorial. Products: a script for those performing the training that explains what to say to the students and what web links to show. Resources: Flappy bird tutorial at code.org/learn.

The interactive project is due per the syllabus: projects that could be used with K – 5th grade are considered E-Day interactive projects. Projects for 6th – 12th grade are considered Middle/High school projects. A short proposal (as above) is due ahead of time per the syllabus.

Rubric for grading this project: Creativity 30%

Quality of handouts/resources 30%

Engaging to targeted age group 20%

Learning outcomes/evidence 10%

Ease of reproducing the activity based on instructions 10%