Open Source Software — CSCI-4961-01 — Summer 2018
Quiz 1
June 28, 2018

SOLUTIONS

1. Short answers (18 pts)

   (a) Richard Stallman defines free software as possessing four essential freedoms. Please list them below. (12 pts)
   - Freedom 0) Freedom to run the program for any purpose
   - Freedom 1) Freedom to study the program how it works and change to your likes (Access to the source code is a precondition)
   - Freedom 2) Freedom to distribute copies to others so that they can benefit
   - Freedom 3) Freedom to distribute modified versions of the code so that others can benefit from your contributions.

   (b) Open source licenses generally fall into two basic types: Copyleft and Permissive. Please define Copyleft and Permissive licenses below. (6 pts)

   i. The characteristics of a Copyleft license are:

   ii. The characteristics of a Permissive license are:

2. Please indicate whether each of the following licenses or licensing scenarios results in a permissive, copyleft, proprietary or public domain (12 points):

   (a) Licensed with GPL:

   (b) Licensed with BSD:

   (c) An integration of two open source projects one licensed copyleft and the other licensed permissive:

   (d) No license:

3. For each question below, circle the best answer (12 pts)

   (a) Which command shows you a summary of all commits into a git repository?

   i. git branch
   ii. git status
   iii. git checkout newbranch
   iv. git log

(b) Literate programming:

i. Is well structured code with minimal comments
ii. Cannot express complicated algorithms
iii. Mixes code and comments in an easily human readable format
iv. Is a failed development methodology

(c) Open or Free software:

i. Cannot be used for a commercial purpose
ii. Can be redistributed either for free or for a fee
iii. Can be sold, but only for the nominal cost of the media used to store it
iv. Must be maintained by unpaid volunteers

(d) It is a good idea when selecting an open source license to:

i. Go to an authority such as the OSI and pick an approved license
ii. Create a new license from scratch because it is unlikely that an existing license would meet your needs
iii. Just place the code in a public repository. Easily available code is the same as open
iv. Take an existing, approved license and modify to better represent your unique personality

4. Give a sequence of git commands to accomplish the following (you can assume that you are always working on the "master" branch") (15 pts):

(a) Create a new git repository on your local machine.

(b) Assume you have a new file "foo.txt" in your local directory. Add this file to your repository.

(c) Set up your repository to communicate with a public repository at "https://www.mypublicrepository/public.git"

(d) Send your changes to the public repository

(e) Assume someone else makes changes to the repository. Add the changes in the public repository into your local version.

Write git commands below:

5. Write markdown to duplicate the document below. You can assume the photo name is "photo.jpg" (15 pts):

Test file - Biggest Header

Next Smallest header

1. Enumerated list
2. Of multiple lines
3. It doesn't matter

And a picture in a smaller yet header

Write Markdown commands below:

6. Assume you have 3 source files a main file “prog.c” and two additional files“f1.c”, and “f2.c” containing code that “prog” depends upon. Write a Makefile that creates object files for all 3 sources, creates a library containing the code from “f1.c” and “f2.c”, and then appropriately creates an executable named “prog.exe”. Make sure your Makefile contains appropriate “all” and “clean” targets. (15 pts):

   Write your Makefile below:

7. Repeat the previous exercise for CMake. (8 pts):

   Write your CMakeLists.txt file below: