

CptS 322 Software Engineering Principles I

Spring 2021

Homework 1

(Due February 4th, 2021 on [Blackboard](#))

1. (10 points) Umbrella activities occur throughout the software process. Do you think they are applied evenly across the process, or are some concentrated in one or more framework activities?

Umbrella activities are defined as the activities that keep the progress of the software development on track and are included within the framework activities. Different framework activities will require different umbrella activities. Some may need multiple umbrella activities while some may not need any. For example, the umbrella activity technical review is needed in the construction framework activity, but not in the communication one.

2. (10 points) When we say that framework activities are applicable to all projects, does this mean that the same work tasks are applied for all projects, regardless of size and complexity? Please explain.

Framework activities are generic and applicable to almost all software development projects. However, the tasks that are then given under each framework activity can vary greatly depending on the size, complexity, and type of project.

3. (10 points) what is the major difference between software (which is the resulting product of software engineering) and the product of other engineering disciplines? Why is software different as so?

Software engineers make software which is intangible and quickly becomes outdated unless it is maintained. Other engineers, for example civil engineers, make tangible structures that are typically meant to last a long time. If a civil engineer designs a bridge, we expect it to last at least five years. Software is expected to last about a year before it needs to be updated. Due to the intangible nature of software, software engineers have

to think in more theoretical ways than other engineers. Other engineers could simply make a prototype of their design and test it. Software can't really be made into a "scaled down" version, so software engineers have to build the whole piece of software or smaller parts of it, but that still doesn't answer how the small parts will work together.

4. (10 points) Fill out the following table to document the problems you encountered, and the web searches you used for answering the above two questions. Fill out the four columns shown below. List at least 5 search phrases that you have used for this homework. Give a simple yes/no in the fourth column to indicate whether the search phrase led you to helpful results. If you have not encountered any problems or used any web searches, then you may just answer so.

Question/Issue You Needed to Resolve	Search Engine or Site Used	Search Query Used	Were Results Helpful? (Yes/No)
Need to understand what 'umbrella activities' are more clearly.	Bing.com	Define umbrella activities	Yes
Need a better understanding of 'framework activities'.	Bing.com	Define framework activities	Yes
Not sure I know all engineering disciplines off the top off my head	Bing.com	Engineering disciplines	Yes

I only looked up these three things for this assignment. I thought the questions were pretty straightforward and didn't need a lot of research to put them into context.