

CptS 322 Software Engineering Principles I

Spring 2018

Homework 4

(Due Friday/March 30th, 2018 on [Blackboard](#))

1. How does a sequence diagram differ from a statechart diagram? And how are they similar? [10 points]
2. Most smartphones feature an app called “phone” or “dialer”. Draw a UML statechart diagram to model the behavior of this app (i.e., for the entire system). [15 points]
3. You are now asked to do requirement analysis for an online shopping system (e.g., eBay or Amazon). Draw a UML sequence diagram that represents the system’s behavior in *placing an order*. [15 points]

4. Fill out the following table to document the problems you encountered and the web searches you used for **all** course assignments up to this point, and assessment of the usefulness of the search results. [10points]

Table: Assessment of Sources Used to Address Questions/Issues

Fill out a table with the 5 columns as shown below. **List at least 6 sources that you've looked at**—3 that you used and 3 that you didn't use—in course assignments up to this point. In column 1 describe the problem/issue you were trying to resolve. In column 2 provide a URL if it was a website, or do a standard citation (APA or IEEE) if it was anything else. In column 3 simply list yes or no indicating whether or not the source helped you resolve the problem or issue. Remember that there should be at least 3 “yes” and 3 “no” in this column. In Columns 4 and 5, assess whether or not each source was relevant and credible, providing a brief but clear rationale for your assessment.

The following is an example for your reference.

Question/Issue you needed to resolve	Source Considered	Did source contribute to resolution of problem/issue? (Yes/No)	Was source <i>relevant</i> to problem/issue? Why or why not?	Would you consider the source <i>credible</i> ? Why or why not?
How can I implement cell highlighting?	www.stackoverflow.com/so/meurl.html	no	No, it talked about actually a slightly different topic.	I believe the source is credible according to the solution description and follow-ups, although it is immediately <u>helpful for my problem</u> .
What is the concept of information hiding?	www.wikipedia.com/sometopic.html	yes	Yes, it provided a clear code sample I could adapt for my purposes	I couldn't tell if the author was an expert, but it seemed to work.
How may I draw the UML class diagram?	www.somerandomcodingblog.com	no		
What are the right use-case relationships in UML?	www.msdn.microsoft.com/somereferencepage.html	yes	Yes, it offers the right information about use-case relationships.	I think the source is trustworthy.
Is it possible to derive unit test cases from UML diagrams directly (instead of from source code)?	Jena, A. K., Swain, S. K., & Mohapatra, D. P. (2014, February). A novel approach for test case generation from UML activity diagram. In <i>Issues and Challenges in Intelligent Computing Techniques (ICICT)</i> , 2014 International Conference on (pp. 621-629). IEEE.	yes	Yes, the paper contains a relevant discussion on generating test cases from UML activity diagrams.	I think it is credible, because the paper has been cited twenty times by later papers.
What are the differences between a statechart diagram and a sequence diagram?	https://books.google.com/books?id=t0a4E94wrp8C&printsec=frontcover&dq=haipeng+cai&hl=en&sa=X&ved=0ahUKEwjG14WIn6PVAhUqxVQKHQ2oD58Q6AEIQzAG#v=onepage&q=haipeng%20cai&f=false	No		

Notes:

- Submit a single PDF for these questions to Blackboard.
- Use standard UML notations when drawing the diagrams.
- For Question 4, you should have encountered enough problems and done enough searches, since by this point you have done quite some assignments for this course. However, if you insist that you indeed did not have enough problems and/or searches, you may just fill in as many as you have actually done, along with your explanations.