Solutions to Excercise Sheet 0

Exercise 1 – Are Software Engineers Managers?

Exercise 2 – Does Software Reliability Matter?

The heartbleed bug

The heartbleed bug was a vulnerability introduced to the Codebase of OpenSSl in December 2011. Since March 2012, affected Versions of OpenSSL allowed atackers to extract information from RAM which was often used before to store private keys and other important information.

The Vulnerability was caused by the implementation of a the 'heartbeat', which is usually used to determine wether a TSL-encrypted connection to a server is still usable and the other partner is responding. This should have been done by sending a message and getting the same content of it back, but the message

The damage which was caused is not excatly known, because

Provide a general description of the case, followed by a more detailed description of the software- related issue and its consequences. Quantify the damages caused and argue why the case is relevant. Discuss in how far the incident (following official reports, or in your opinion) is related to issues with requirements, design, quality assurance, management, or usage under specified conditions.

Survey

1. Expectations

Our expetcations in Softwaretechnik course are:

- to understand the process of software production
- Learning more about General Planning as well as Specific to Software Development
- to gain knowledge in requirement analysis, process scheduling, organisation, resource distribution, design and testing
- to learn how to use basic and maybe some advanced techniques, models and patterns in software development
- learn the modern techniques of software engineering (agil instead of waterfall), e.g. DDD, TDD, BDD
- getting to know valuable Design-Patterns
- to see a focus on software architecture (more than just some design patterns)
- to focus deeper on software architecture in General
- to get smarter

- have fun
- think about Software in a more General way

We think that this will help us with our career because managment experience (even if only in theory) can help in any job. And for a programmer it is good to have an overview of the entire process one is working in. For coding projects one is doing as a hobby, which sometimes can be good for a portfolio, it is good to to know what (not) to do, and how to work efficiently. And getting better at problem solving, working as a team and having fun just makes studying (and later on working) easier.

2. Previous Experience

	0	1	2	3	4	5	6	7	8	9	10
Project Management (cf. Exercise 1)											
Nils Hagner	x										
Michael Fleig			x								
Anush Davtyan			x								
Felix Karg							x				
Requirements Engineering (capturing and managing requirements from users or clients)											
Nils Hagner	x										
Michael Fleig						x					
Anush Davtyan					x						
Felix Karg					x						
Programming (writing code, fixing bugs)											
Nils Hagner		x									
Michael Fleig										x	
Anush Davtyan					x						
Felix Karg										x	
Design Modelling (creating an architecture or behavior model of a solution)											
Nils Hagner	x										
Michael Fleig											x
Anush Davtyan				x							
Felix Karg								x			
Software Quality Assurance (e.g., testing, code review, formal verification)											
Nils Hagner	x										
Michael Fleig									x		
Anush Davtyan				x							
Felix Karg									x		

3. Regarding the Softwarepraktikum...

	Nils Hagner	Michael Fleig	Anush Davtyan	Felix Karg
I will be participating in it this semester.				
I have already taken part.				
I will participate in it in the following semesters.	x	x	x	x
It is not part of my study plan.				

4. Language

☐ German.
☐ I prefer German, but English is okay.
☒ I prefer English, but German is okay.
☐ English.