Kevin Pinto

Greg Rigot

Khalid Ibrahim

Zakaria Lazzouni

Assignment 4 – Group Review of Units 1 & 2

**How are computer science and software engineering similar? How are they different? Use at least two quotes. Cite them. Fully explain.**

Computer Science and Software Engineering are similar in that, to quote Tony Targonski;

*“If Computer Science is about writing code, Computer Engineering is thinking about writing said code.”* – ***(Tony Targonski – “6 Degrees of Computer Science”)***

Computer engineering deals with the design of specialized types of software while software engineering is the development and improvement of said software.

The fields of Software Engineering and Computer Science also differ in that Computer science is a general study of all things IT; involving a variety of subjects that go further than software development.

*“Software Engineering is more abstract, more “larger picture” focused. Lack of Pointer kung-foo is made up with non-technical skills such as communication and presentations. Management material education.”*– ***(Tony Targonski – “6 Degrees of Computer Science”)***

Computer Science is recognized as an independent discipline with an inherently mathematical nature. It can range from theory all the way to formal programming languages and logic.

**In your own words and in your own way, contrast functional and non-functional requirements. Create a very clear, concise example of each that shows that you deeply understand the difference. Be sure to re-read and edit them. Explain why each functional requirement is in fact functional and why each non-functional requirement is in fact non-functional.**

A Functional requirement is a specific functionality that describes what a system is supposed to accomplish. Functional requirements include administrative, business, user, and system requirements. A Non-functional requirement is a “quality of life” requirement that imposes constraints on a program. Non-functional requirements involve the scalability, supportability, reliability, performance, usability and security of a program. A highly simplified way of explaining the difference between functional and nonfunctional requirements is to say that in general, functional requirements are things that the user can interact with, whereas non-functional requirements involve the basic structures that are predetermined before the program/software is even made. The best way to describe the difference is to examine a website/application directly, for example a social media platform like Twitter or Youtube.

A pretty common and consistent functional requirement for most websites/apps is the requirement to log into your account before you can access the features of said website/app. This is a functional requirement because it involves a direct interaction with the user.

A common non-functional requirement that is also consistent across most platforms is returning fast search results, typically under a specified time. A good way to determine if a requirement is non-functional is checking to see if the requirement in question quantifies a numerical value, such as upload/download speed, ping, etc.