

**1. What is an example of a “Usage-centric” software product? What is an example of a “Product-centric” software product?**

A "usage-centric" software product is designed to be used for a specific style of the user. One example is an inventory software that helps the user to keep track of supply and demand to make it easier for the user to understand how much goods need to be sold before ordering new reserves. 0

" product-centric " software will focus on the product's features and functionality. An example of this would be photo/video editing software that will mainly focus on development and how it can help in editing/producing an excellent outcome

**2. Describe the “Elicitation/Analysis,” “Specification,” and “Validation” activities in the RE Framework.**

The "Elicitation/Analysis" activity involves gathering and understanding the requirements for a product. The specification is a description of what the exact problem is and building a requirement specification model. Validation is seeing if a product, system, or component meets specified requirements.

**3. What are the “4 variables” in the 4-Variable Model?**

The four variable models have controlled variables, input, output, and monitored variables.

**4. In your own words, describe the eh, ev, sh, sv variables of the Reference Model.**

Eh: controllable variables by the environment and represents the phenomena of things that are hidden from the system.

Ev: controllable variables by the environment

Sh: this system response to the phenomenon hidden.

Sv: this system interaction to the phenomenon is hidden

**5. How may defining “AS-IS” and “TO-BE” scenarios help with the RE process?**

The "AS-IS" scenario describes the system's current state and helps identify the areas where the system needs improvement.

The "TO-BE" scenario describes the desired future state of the system, and it helps set goals for the new system and helps understand the process.

**6. What are the different types of models in KAOS Requirements Models, and what are they each used for?**

**Goal Model:** This specifies the higher-level aims that a system must achieve.

**Responsibility Model:** it describes the responsibilities of the actor.

**Object Model:** The object model captures the connections between the system's Object classes.

**Operational Model:** This describes agents' actions, such as generating new Objects or initiating state changes.

**7. What does “ICOM” stand for in IDEF0? Give two rules of drawing IDEF0 models.**

1. Boxes must be rectangular with square corners and created with solid lines in order to input box names.
2. Bending arrows must be drawn in solid line segments vertically or horizontally, not diagonally.

**8. Give a real-life example of relating an NFR back to an FR.**

As an example, I am building a website for a retail business. The F requirements would allow users to buy new things online; the NFR would be accessible to individuals with disabilities.

Since NFR allows customers to view and purchase items online, it is closely related to FR because both require an accessible website.

**9. What are some major benefits of having a well-defined and well-enforced change control policies?**

The change control policies help improve the quality, security, stability, and efficiency of their systems and processes.

**10. What are some examples of typical risks that could be caused by Prototyping?**

Prototyping risks include cost and time, quality, and compatibility.

Most businesses strive to make their prototypes as distinctive as possible. They ignore whether the product is compatible or not throughout this phase, putting the expense and time that it took to create it at risk, and because the product is not developed to be utilized by a client and is primarily intended to display the built quality of the prototype is generally poor.

**11. Briefly describe how you might develop the acceptance criteria for an agile project.**

I would've developed the agile project criteria by referring to the user stories and seeing the necessary functionality described in them. After much consideration, I chose them and decided to work on them.

**12. “The system shall be user-friendly.” – is this statement a good description of an NFR? Why or why not?**

This statement does not describe a non-functional requirement (NFR) because it refers to specific requirements of the project. Now, as we know that particular requirements are nothing but functional requirements, and NFR is a quality attribute rather than a requirement.

**13. Write an LTL formula for this property: “every request (req) eventually leads to a response (resp)”**

*every request (req) eventually leads to a response (resp)*

$\Box(req \rightarrow \Diamond resp)$

**14. Who is the stand-up comedian that we referenced once in one of the lessons?**

John mulaney

**15. What is the most important concept that you learned in Cpt\_S 484? Explain.**

I find the most important topic to be about change control process in this course because in a recent project, multiple people committing to a GitHub file at the same time caused confusion and made it difficult to track changes. I believe this change control would have helped prevent this confusion in that project.

**16. A tax filing company (such as TurboTax or similar) wants to develop a mobile app that may assist their customers with filing tax. Specifically, the app allows the users to take a picture of a store receipt (from Walmart/Target, for instance), and automatically grab the sales tax amount from the picture.**

- 1. Briefly summarize the requirement above with the “why-what-how” model.**
- 2. Write up an “AS-IS” scenario for this app.**
- 3. Name an NFR that you think is important for this app and explain why.**
- 4. Name at least two user classes that might be using such an app.**
- 5. Which elicitation technique would you choose to gather requirements for this app? Justify your answer.**

1. To assist with tax filing, the mobile app needs to allow users to snap a photo of a receipt and automatically calculate the sales tax amount. Using image recognition technology, the app will accomplish this.
2. The "AS-IS" scenario for this app would be users using the tax filing software to enter the information of the store receipts.
3. One necessary non-functional requirement (NFR) for this app could be accuracy, as it is essential to calculate the exact tax amount.
4. Two user classes that use this app are individual taxpayers and small business owners.
5. I recommend combining elicitation techniques to gather requirements for this application. These could include interviewing and observing the users and their filing process. A focus group or survey is also effective in getting needs from more people.