Prompt

You are working as a junior software developer and your manager has come to you with a project for you to work on while they are out of the office this week

Park Station Manufacturing

This manufacturing company wants to start producing video clips on how customers can use their products for training and educational purposes. They would like to use high-quality video editing software that is only available for Mac, because Macs have better desktop publishing capabilities. The challenge is that the company uses Windows exclusively at this time.

- If your client wants a product that is easy to use, you can translate this into a design constraint such as “the product should have no more than three buttons or switches” or “the product should have clear and intuitive instructions”. This constraint ensures that the product is user-friendly and does not require extensive training or learning. It also reduces the complexity and cost of the product.
- If your client wants a service that is fast and reliable, you can translate this into a design constraint such as “the service should have an average response time of less than 10 seconds” or “the service should have a success rate of at least 99%”. This constraint ensures that the service meets the expectations and needs of the customers and does not cause frustration or dissatisfaction. It also improves the efficiency and quality of the service.
- If your client wants a system that is secure and robust, you can translate this into a design constraint such as “the system should have multiple layers of encryption and authentication” or “the system should have a backup and recovery mechanism”. This constraint ensures that the system protects the data and privacy of the users and does not suffer from unauthorized access or data loss. It also enhances the reliability and durability of the system.

The next step is to generate different design alternatives that meet these constraints and evaluate their strengths and weaknesses. You can use various methods such as brainstorming, sketching, prototyping, or simulation to explore different possibilities. To evaluate the strengths and weaknesses of a design, you can use criteria such as feasibility, functionality, usability, aesthetics, sustainability, or cost. You can also use tools such as matrices, charts, or diagrams to compare and rank different designs based on these criteria. Some other design criteria that you might consider are safety, accessibility, scalability, maintainability, or innovation.

Usability refers to how easy and satisfying it is for the users to interact with a design. It involves aspects such as efficiency, effectiveness, learnability, memorability, error prevention, feedback, and satisfaction. Aesthetics refers to how pleasing and attractive a design is to the users. It involves aspects such as color, shape, texture, harmony, balance, contrast, and style. A design can be usable but not aesthetic, or aesthetic but not usable. For example, a design for a website might be usable but not aesthetic, because it has a simple and clear layout but a dull and boring appearance. A design for a sculpture might be aesthetic but not usable, because it has a beautiful and elegant form but no practical function.

Explain your rationale for each design constraint you’ve identified and how it relates to the requirements provided to you by the client.

- For the product that is easy to use, I chose the design constraint of having no more than three buttons or switches because it simplifies the interface and reduces the cognitive load for the users. It also makes

the product more compact and elegant. I related this constraint to the requirement of ease of use by asking myself how I would feel if I had to use a product with many buttons or switches that I did not understand.
- For the service that is fast and reliable, I chose the design constraint of having an average response time of less than 10 seconds because it ensures that the service is responsive and timely. It also prevents the users from losing interest or patience. I related this constraint to the requirement of speed and reliability by asking myself how I would feel if I had to wait for a long time for a service that might fail or give me wrong results.
- For the system that is secure and robust, I chose the design constraint of having multiple layers of encryption and authentication because it safeguards the system from external threats and attacks. It also gives the users confidence and trust in the system. I related this constraint to the requirement of security and robustness by asking myself how I would feel if I had to use a system that was vulnerable or unstable.

<Name-of-Client>

Software Design Template

Version 1.0

Table of Contents

Document Revision History

Version	Date	Author	Comments
1.0	mm/dd/yyyy	<Your-Name>	<Brief description of changes in this revision>

Instructions: Fill in all bracketed information on page one (the cover page), in the Document Revision History table, in the footer, and below each header. Under each header, remove the bracketed prompt and write your own paragraph response covering the indicated information.

Executive Summary

<Summarize the client's problem in 2-3 sentences. Be sure to provide all relevant background information, including the name of your client.>

Requirements

<In your summary, identify each of the client's business and technical requirements in a clear and concise manner.>

Design Constraints

<Translate your client's requirements into at least three design constraints.>

Rationale

<Explain your rationale for each design constraint you've identified and how it relates to the requirements provided to you by the client.>