**Assignment – 1**

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1. What is the most important difference between generic software product development and custom software development? What might this mean in practice for users of generic software products?

**Answer:**

**Difference between generic software product development and custom software development:**
Generic software product development concentrates on a large audience, cost-efficiency, and uniformity with the goal of producing a one-size-fits-all solution. But with custom software development, flexibility, customization, and exact alignment with client requirements are prioritized in order to fulfill the unique needs of a certain customer.

**Users of generic software products:**

- Standard features are provided for common purposes.
- There are few choices for customization.
- A large user base contributes to its affordability.
- Expect consistent updates and neighborhood support.
- Usually, scalability and industry standards are included.
- Although onboarding is simplified, deep customization is given up.

2. Briefly discuss why it is usually cheaper in the long run to use software engineering methods and techniques for software systems.

**Answer:**

Using software engineering methodologies ultimately turns out to be quite cost-effective. These approaches provide a planned and methodical approach throughout development, thereby reducing risks. By prioritizing quality from the start, problems and expensive fixes are less likely to occur. Quicker product releases that are the outcome of accelerating development give businesses a competitive edge. Reusing code and design components across projects boosts productivity and lowers costs. Engineering procedures also put scalability first, planning for growth without extensive changes. The financial advantages of using strong software engineering principles are further underlined by the decrease in maintenance requirements and expenses, as well as the conformity with industry standards.

3. Explain why professional software that is developed for a customer is not simply the programs that have been developed and delivered.

**Answer:**

A methodical approach is used while developing professional software for a client. First and first, it is crucial to fully comprehend the customer's needs through extensive requirements analysis. The next step is to create an effective software architecture that meets these requirements and provides scalability and maintainability. The next step is to write clear, readable code that is efficient and simple to modify in the future. Thorough testing and quality control guarantee that the program works

properly and offers a satisfying user experience. Effective understanding and usage of the product are aided by thorough documentation, including user and development guides. User happiness depends on the user interface (UI) being simple to use and visually appealing, as well as on the user experience (UX). The next step is to deploy the program, smoothly integrate it, and offer ongoing maintenance and support. Compliance with legal standards, such as those relating to data security and privacy, is essential. Finally, incorporating client input and collaboration throughout the process guarantees that the software reflects the customer's vision and produces a successful product.

4. Incremental software development could be very effectively used for customers who do not have a clear idea about the systems needed for their operations. Discuss.

**Answer:**

Software that is developed incrementally is very successful for customers with ambiguous system requirements. It responds to changing requirements, gets early input, lowers upfront costs, reduces risks, promotes teamwork, permits iterative improvement, and shortens time-to-market. It provides a flexible and individualized solution that works well with customers as they explore and develop their operational demands.

5. Suggest the most appropriate generic software process model that might be used as a basis for managing the development of the following system. Explain your answer according to the type of system being developed:

a. A system to control antilock braking in a car.

**Answer:**

The most suitable general software process model for creating an **antilock braking system for an automobile** is **incremental development**. This paradigm enables the early delivery of crucial functionality, facilitates feedback and flexibility which allows continuous improvement, aids in risk management which identifies and mitigates risks effectively, and permits parallel development initiatives so that multiple teams can work simultaneously. It also allows for the development of the system in tiny, manageable increments.

6. Suggest the most appropriate generic software process model that might be used as a basis for managing the development of the following system. Explain your answer according to the type of system being developed:

a. A university accounting system that replaces an existing system

**Answer:**

The **Integration and Configuration model** is the appropriate general software process model for the creation of **a university accounting system to replace an existing one**. This strategy entails integrating the new system with the current databases and software to enable a smooth migration of information and features from the old accounting system to the new one. Additionally, the new system must be set up to conform to the university's unique accounting requirements by customizing features and functionalities. The Integration and Configuration approach makes sure that important system features are retained and transferred to the new one. Data transfer and customization to meet the structure and requirements of the new system are crucial components of data migration and

transformation. To ensure that the integrated and configured system functions flawlessly, achieving the anticipated accounting functionality, and facilitating a smooth transition for the university, rigorous testing and verification processes are essential.