Discussion-2 SDLC process

Discussion Topic:

You are attending a meeting regarding project development using the SDLC. Your manager is giving a high-level overview of the SDLC process, but your colleagues look confused about some of the points. As a result, your manager asks you to schedule a meeting to present the four phases and the importance of each to your colleagues.

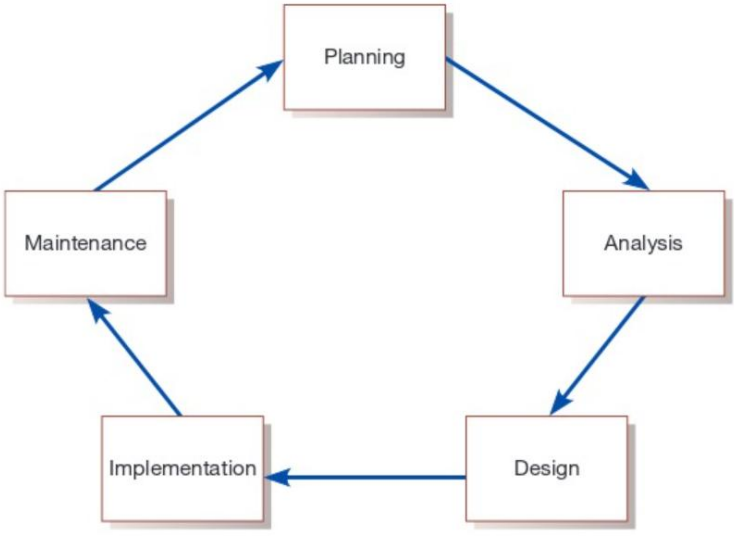
In your own words, how would you explain each of the phases to your colleagues during the meeting? Provide specific examples that will help them understand each of the phases and their importance.

My Post:

Hello Class,

To explain the SDLC phases to my colleagues, I will first break down the five phases: Planning, Analysis, Design, Implementation, and Maintenance (note that the manager calls for four phases; however, it is five phases if we include Maintenance). I'll explain that the SDLC phases are similar to building a house, the first four phases, and then maintaining a house, the fifth phase. You wouldn't start building walls randomly, right? You need a plan. Additionally, SDLC stands for Software Development Life Cycle, and the word 'Cycle' in its name refers to the cyclic nature of the process. See Figure 1 for an illustration of the SDLC's cyclic nature.

Figure 1
SDLC phases



Note: The figure illustrates the different SLCD phases: Analysis, Design, Implementation, and Maintenance, and the cyclic nature of the process. From “Chapter 1: The Systems Development Environment. *Modern Systems Analysis and Design* (9th ed.)” by Valacich and George (2020)

Phase 1: Planning

In this phase, we figure out the big picture. If this is new software, we establish the goals and scope of our software development project (Jackson, 2024). For existing software, we identify the need for software enhancements and determine the goals, feasibility, and scope of these enhancements (Valacich & George, 2020).

For example, when implementing a new company website, the goal might be to enhance the company's online visibility. Then, we determine if it is feasible (budget/development time) and define the scope by identifying the website features (like a product catalog, contact form, or blog).

Phase 2: Analysis

The Planning phase gave us a general direction. In this phase, we map the details. What exactly does the software need to do? The Analysis Phase is sometimes called the Requirements Analysis Phase, meaning that in this phase, we focus on deeply understanding the project's needs/requirements and document these requirements in a clear, structured way (Itexus, 2024).

For the company website project example during this phase, we gather information, for example, we interview the sales team to define exactly what service information needs to be presented and how. Then we analyze the gathered information by translating it into specific requirements, and then documenting these requirements into a Software Requirements Specification (SRS) document.

Phase 3: Design

We know what to build (from Analysis), now we figure out how to build it. What is it? In this phase, we outline the software's navigation, user interfaces, database design, and more (Jackson, 2024). We create a blueprint by deciding on the overall structure (architecture), defining how different parts of the software will talk to each other, how the database will store information, and what the user interface (UI) will look like (detailed mockups, wireframes), as well as defining the programming languages.

For the company website example, in this phase, we may decide to use WordPress as the Content Management System (CMS), PHP as the language, and MySQL for the database. We create webpage mockups in Figma. All this design work is collected and documented in a Software Design Document (SDD).

Phase 4: Implementation (Development)

This is where the coding happens! By using the SDD collected during the Design phase, we write the actual code (Jackson, 2024), and we set up the database according to the design.

For our company website example, in this phase, we write the PHP, HTML, CSS, and JavaScript code based on the SDD and mockups. Additionally, we set up the databases and connect them to the website. After testing the system, we launch the website.

Phase 5: Maintenance

We have built and launched the website, great! The SDLC doesn't stop there; remember, it is a cyclic process. There are always unanticipated fixes, new use cases, and software optimizations that we must address (Jackson, 2024). We can restart the SDLC by implementing new versions or releases of the software, with new updates, documentation, training, and support (Valacich & George, 2020).

For the company website project example, in this phase, we go back to the Planning phase by finding bugs that need to be fixed, adding new features, and updating the WordPress/PHP software and its plugins to patch potential security holes.

To summarize, the Software Development Life Cycle (SDLC) is similar to building a house and maintaining it. The cyclic process can be broken down into five phases: Planning, defining goals and feasibility of the

project; Analysis, gathering detailed requirements; Design. creating the technical blueprint; Implementation, writing the code and building the software; and Maintenance, fixing bugs, adding new features, and updating the software. Note that the SDLC is a cyclical process because the software is a live and evolving system that needs to be maintained, leading to new enhancements or fixes that need planning.

-Alex

References:

Itexus (2024, November 4). *The analysis phase in SDLC: A comprehensive guide.* Itexus. https://itexus.com/the-analysis-phase-in-sdlc-a-comprehensive-guide/

Jackson, G. (2024, December 13). *What is the software development life cycle (SDLC)?* IBM. https://www.ibm.com/think/topics/sdlc

Valacich, J. S., & George, J. F. (2020). Chapter 1: The Systems Development Environment. *Modern systems analysis and design* (9th ed.). Pearson Education, Inc. ISBN-13: 9780135172841 (digital) or 9780135791592 (e-text)