Republic of the Philippines
Department of Education
REGION III
SCHOOLS DIVISION OFFICE OF NUEVA ECIJA

LEARNING ACTIVITY SHEET
SPECIAL PROGRAM IN ICT 9
BASIC PROGRAMMING 9
First Quarter, Week 3

SDLC (Software Development Life Cycle)

BACKGROUND INFORMATION FOR LEARNERS

Building, bridges, and all other infrastructures was built and designed by engineers, do have any idea how they start? All projects start with a plan, engineer can not build building and houses without a plan.

Just like in Software development, program developers also start with a plan which is SDLC or Software Development Life Cycle.

In this lesson, will discuss how to create a Software Development Plan.

What is SDLC?

SOFTWARE DEVELOPMENT LIFECYCLE (SDLC) is a systematic process for building software that ensures the quality and correctness of the software built. SDLC process aims to produce high-quality software that meets customer expectations. The system development should be complete in the pre-defined time frame and cost. SDLC consists of a detailed plan which explains how to plan, build, and maintain specific software.

Why SDLC?

Here, are prime reasons why SDLC is important for developing a software system.

- It offers a basis for project planning, scheduling, and estimating
- Provides a framework for a standard set of activities and deliverables
- It is a mechanism for project tracking and control
- Increases visibility of project planning to all involved stakeholders of the development process
- Increased and enhance development speed
- Improved client relations
- Helps you to decrease project risk and project management plan overhead

SDLC Phases

The entire SDLC process divided into the following stages:

Phase 1: Requirement collection and analysis:

The requirement is the first stage in the SDLC process. It is conducted by the senior team members with inputs from all the stakeholders and domain experts in the industry. Planning for the quality assurance requirements and recognition of the risks involved is also done at this stage.

Phase 2: Feasibility study:

Once the requirement analysis phase is completed the next step is to define and document software needs. This process conducted with the help of 'Software Requirement Specification' document also known as 'SRS' document. It includes everything which should be designed and developed during the project life cycle.

There are mainly five types of feasibilities checks:

- **Economic:** Can we complete the project within the budget or not?
- **Legal:** Can we handle this project as cyber law and other regulatory framework/compliances.
- **Operation feasibility:** Can we create operations which is expected by the client?
- **Technical:** Need to check whether the current computer system can support the software
- **Schedule:** Decide that the project can be completed within the given schedule or not.

Phase 3: Design:

In this third phase, the system and software design documents are prepared as per the requirement specification document. This helps define overall system architecture.

Phase 4: Coding:

Once the system design phase is over, the next phase is coding. In this phase, developers start build the entire system by writing code using the chosen programming language. In the coding phase,

tasks are divided into units or modules and assigned to the various developers. It is the longest phase of the Software Development Life Cycle process.

In this phase, Developer needs to follow certain predefined coding guidelines. They also need to use programming tools like compiler, interpreters, debugger to generate and implement the code.

Phase 5: Testing:

Once the software is complete, and it is deployed in the testing environment. The testing team starts testing the functionality of the entire system. This is done to verify that the entire application works according to the customer requirement.

During this phase, QA and testing team may find some bugs/defects which they communicate to developers. The development team fixes the bug and send back to QA for a re-test. This process continues until the software is bug-free, stable, and working according to the business needs of that system.

Phase 6: Installation/Deployment:

Once the software testing phase is over and no bugs or errors left in the system then the final deployment process starts. Based on the feedback given by the project manager, the final software is released and checked for deployment issues if any.

Phase 7: Maintenance:

Once the system is deployed, and customers start using the developed system, following 3 activities occur

- Bug fixing - bugs are reported because of some scenarios which are not tested at all
- Upgrade - Upgrading the application to the newer versions of the Software
- Enhancement - Adding some new features into the existing software

The main focus of this SDLC phase is to ensure that needs continue to be met and that the system continues to perform as per the specification mentioned in the first phase.

Sample of Phase 1(Requirement collection and Analysis and Phase 2 (Feasibility study)

Scenario

A small business owner wishes to have computerized selling system. The owner wants to monitor his daily sales and product inventory. He wants to finish the system within 45 days and he only have 15, 000 pesos budget for this project.

Phase 1 (Requirement collection and analysis)

What to do?

- Computerized Selling and Inventory System

System Requirements

- Can record daily sales
- Can generate daily sales record
- Items lists and prices
- Daily inventory of products
- Can generate inventory report
- Can print sales and inventory report

Phase 2 (Feasibility study)

Should answer the following:

Economic	P 15,000 budget, yes can finish within the budget
Legal	No need for legal requirement
Operation feasibility	The system requirements are possible to meet
Technical	Need to check computer unit of the store if capable for system installation
Schedule	Need to finish the system within 45 days

LEARNING COMPETENCY

Familiarize with SDLC

Identify the different phase of SDLC

Create sample of phase 1 - Requirement collection and analysis

ACTIVITIES

Scenario

A small store owner wants to create his/her own inventory system to track which items are fast and slow moving. She/he also wants to track the exact number of items/products at the end of the day to identify items need to purchase. The customer wants to have the system in 25 days, and he/she allotted only 10, 000 pesos for this project

ACTIVITY 1

Directions: Create the requirement collection and analysis plan.

Answer:

What to do?

_____

_____

_____

System Requirements

_____

_____

_____

_____

_____

ACTIVITY 2

Directions: Based on the given scenario above create the feasibility study by completing the table below.

Economic	
Legal	
Operation feasibility	
Technical	
Schedule	

REFLECTION

As an application developer, why SDLC is important? Elaborate your answer.

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REFERENCES

https://www.guru99.com/software-development-life-cycle-tutorial.html

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