DUNIS TECHNOLOGIES LIMITED
CODING FUNDAMENTAL LESSON 3

SOFTWARE DEVELOPMENT PROCESS

By now you are expected to have understanding of what software really is. However, for the purpose of emphasis, software is a set of instructions written or developed using one or more programming languages. The development of these set of instructions usually requires a standard process that must be followed. These are also referred to as SOFTWARE LIFE CYCLE.

Software Engineering process also known as SOFTWARE LIFE CYCLE; involves grouping the process of developing software into distinct phases. These phases are as follows

1. **ANALYSIS** – GETTING NECESSARY REQUIREMENTS OF WHAT YOU WANT THE SOFTWARE TO DO
2. **DESIGN**- THIS INVOLVE DEVELOPING ALGORITHM AND FLOW CHART

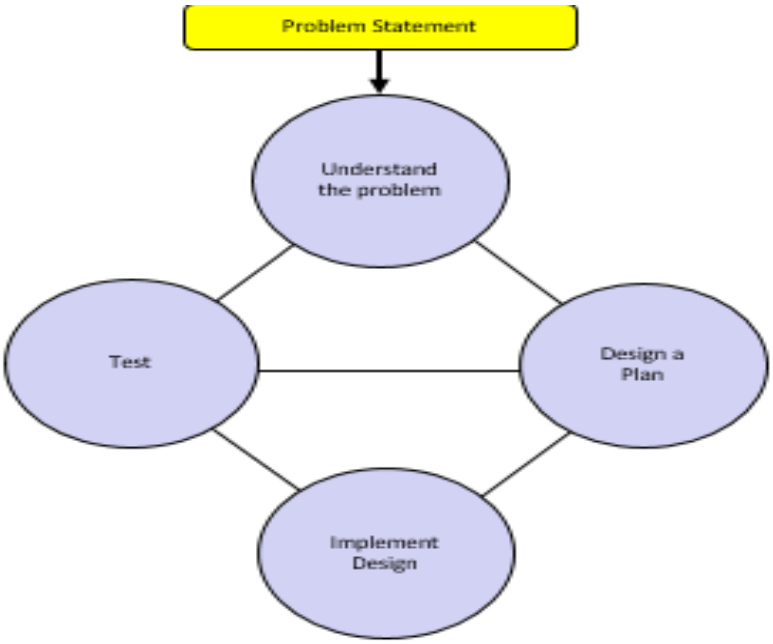
3. **IMPLEMENTATION**- INVOLVES DEVELOPING YOUR DESIGN USING THE REQUIRED PROGRAMMING LANGUAGES OR TOOLS
4. **DEPLOYMENT & TESTING**- CHECKING OUT YOUR CODES IF THEY WORKED ACCORDING TO YOUR DESIGN AND REQUIREMENTS.

Each of the process or phase can be further divided into sub process making up to about 5 to 6 process or phases. Notwithstanding these four phases or processes are considered the major ones

To explain and demonstrate these processes, you are going to be introduced firstly to a simple software tool called ALICE for the purpose of mastering these processes easily after which we would build

upon it using JAVA, a traditional programming language.

Here's a diagram representation of software development lifecycle



ALGORITHM

The first process in building or developing a software is more of investigation and documentation; analysis what and what the software would require. The next phase however can be cumbersome without some form of breaking down the task to be done

into simple, clear, finite, steps that can be followed in designing the software. These steps are called ALGORITHM.

An Algorithm, is a step by step procedure, which defines a set of instructions to be executed in a certain order to get the desired output. To simplification, it can also be defined as a set of instructions that can be followed to solve a problem or perform a task. Note that Algorithms are generally language independent meaning that they are not written in a programming language but can be implemented or translated into any programming language of one's choice. Mostly they are written in a universal language like English or using a graphical representation called FLOW CHART

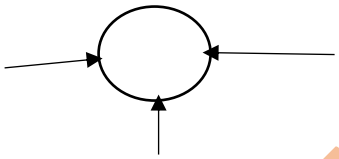
FLOWCHART

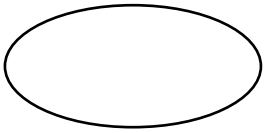
DUNIS TECHNOLOGIES LIMITED
CODING FUNDAMENTAL LESSON 3

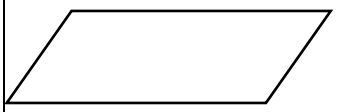
A flowchart represents an algorithm in a graphical manner. There is a standard set of rules that we must follow when we draw flowchart.

We use shapes to draw flowchart.

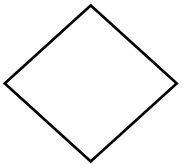
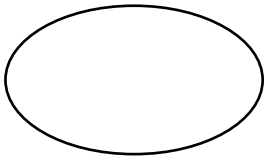
S/N	NAME	SYMBOL/SHAPES	DESCRIPTION
1.	ARROW		ARROWS ARE DRAWN FROM ONE BOX TO ANOTHER TO REPRESENT THE FLOW BETWEEN BOXES. THEY ARE BROKEN

			UP BY THE CONDITION BOXES.
2.	CONNECTOR		IF ARROWS HAVE DIVIDED, THEY MUST FIRST COME TOGETHER BEFORE PERFORMING ANY COMMON ACTIONS. A CONNECTOR IS USED TO

			ACHIEVE THIS. THE CONNECTOR IS OFTEN OMITTED, LEAVING ONLY A POINT OF INTERSECTION.
3.	START		IT REPRESENTS THE START OF AN ALGORITHM. A START OR

			END PROGRAM
4.	INPUT/OUTPUT		INPUT STATEMENT EITHER READS FROM ANOTHER FILE OR RECEIVES INPUT FROM THE USER. OUTPUT STATEMENT OUTPUT INFORMATION ONTO THE

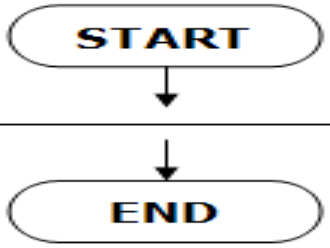
			SCREEN. INPUT STATEMENT ARE NOT ALWAYS AT THE BEGINNING OF AN ALGORITHM AND OUTPUT STATEMENT IS NOT ALWAYS LOCATED AT THE END OF

			AN ALGORITHM.
5.	CONDITIONAL	DIAMOND 	A DECISION TO BE MADE OR A CONDITION TO BE MET. E.G. YES/NO TRUE/FALSE
6.	END	OVAL 	THE END SYMBOL IS USED LIKE THE START SYMBOL. ALL BRANCHES OF THE CODE

			MUST ULTIMATELY LEAD TO THE END.
7.	PROCESS	RECTANGLE 	THIS IS A PROCESS OR INSTRUCTION TO BE CARRIED OUT

DUNIS TECHNOLOGIES LIMITED
CODING FUNDAMENTAL LESSON 3

IN SUMMARY

Oval	Flow Line	Parallelogram
The start or end of the program.	The direction of logic flow in a program.	An input or output operation. GET for input, PUT for output.
		

Rectangle	Diamond
A process or statement to be carried out.	A decision to be made. Usually branches to Y/N or True/False.