Computing Science 10

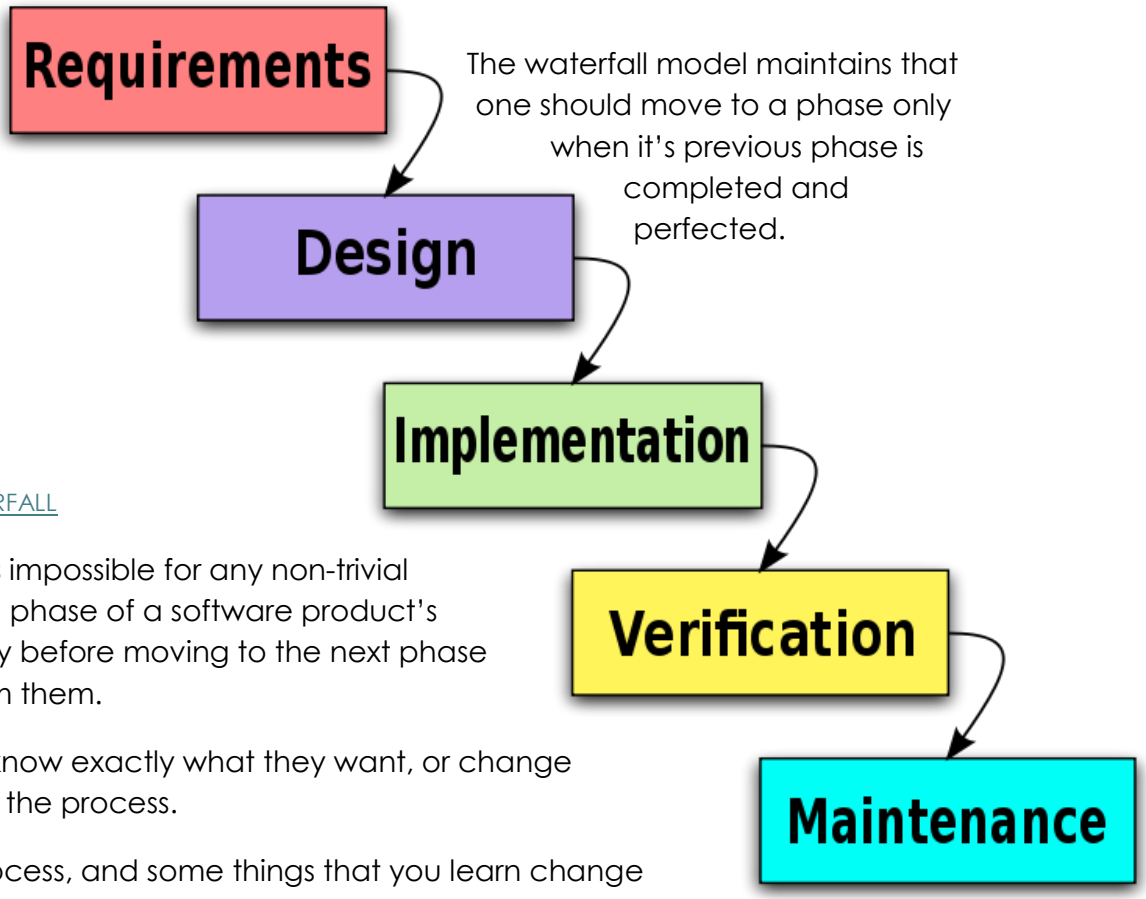
SECTION 3

Compare and contrast the "iterative and incremental" and "waterfall" models of software development.

Waterfall

The waterfall model is a sequential design process, often used in software development processes, in which progress is seen as flowing steadily downwards (like a waterfall) through the phases of Requirements, Design, Implementation, Verification, and Maintenance.

ROYCE'S ORIGINAL WATERFALL MODEL



The waterfall model maintains that one should move to a phase only when it's previous phase is completed and perfected.

CRITICISM OF WATERFALL

Some believe it is impossible for any non-trivial project to finish a phase of a software product's lifecycle perfectly before moving to the next phase and learning from them.

Clients may not know exactly what they want, or change their mind during the process.

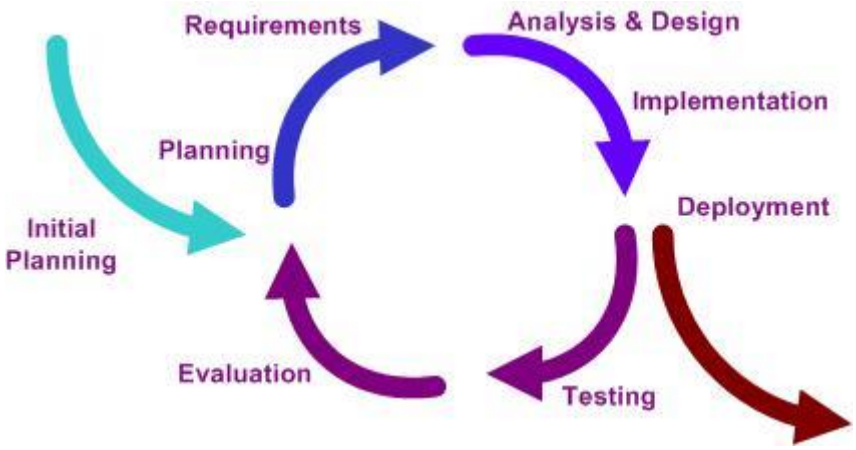
It's a learning process, and some things that you learn change what you have previously done and therefore need to backtrack.

Iterative and Incremental

The Iterative and incremental software development process developed in response to the weaknesses of the waterfall model.

The basic idea behind this method is to develop a system through repeated cycles (iterative) and in smaller portions at a time (incremental), allowing software developers to take advantage of what was learned during development of earlier parts or versions of the system.

AN ITERATIVE DEVELOPMENT MODEL



Demonstrate the analysis and design stages of a Systems Development Life Cycle model.

The systems development life cycle (SDLC), is a term used in systems/software engineering, and information systems to describe a process for planning, creating, testing, and deploying an information system.