

CT60A5103 Software Engineering Models and Modeling

SOFTWARE PROCESS MODELS

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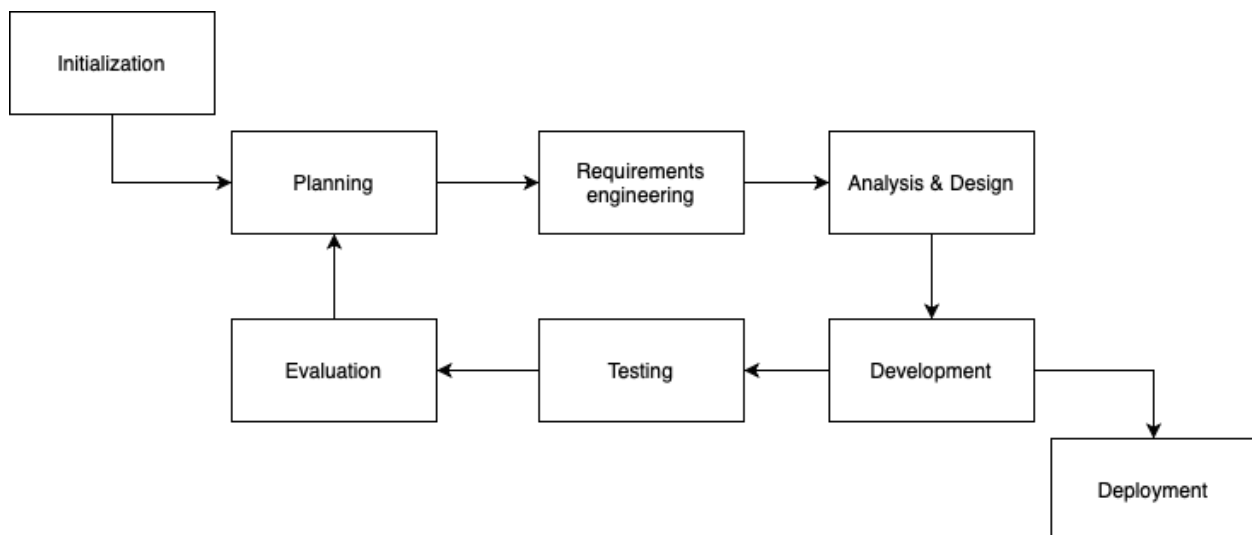
1. Introduction

This document presents the software engineering process model designed for the **AudioNow** project for MediaFun Inc., a real-time audio-based social media and podcast platform. Our goal is to ensure a comprehensive approach to software development, allowing for regular feedback and iteration. The project needs to adhere to the 12-month deadline, as requested by the customer.

We have selected the **Iterative Development Model**. It supports progressive refinement and flexibility based on feedback from the proof-of-concept (PoC), testing, and monthly reviews.

2. The Iterative Development Model

The Iterative Development Model was selected for several reasons. First, it allows our development teams to build and refine the system by iterations, with feedback at the end of each iteration. Furthermore, this approach ensures frequent reviews and adjustments based on the client's inputs, as required by our partner MediaFun. Finally, with this method, we can deliver a POC early, reserving the final month for quality assurance (QA).



Each step in this process could be summarized as follows:

- **Initialization:** Here a base version of the system is created. This initial implementation provides a simple solution that users can react to and helps identify key aspects of the problem.
- **Planning & Requirements Engineering:** At this stage, we map out the specification documents, establish software or hardware requirements, and generally prepare for the upcoming stages of the cycle.
- **Analysis & Design:** Next, an analysis is performed to specify the appropriate business logic, database models, and the like that will be required at this stage in the project. The

design stage also occurs here, establishing any technical requirements (languages, data layers, services, etc.) that will be utilized in order to meet the needs of the analysis stage.

- **Development:** This is the stage where actual implementation and coding process can begin. All planning, specification, and design documentation up to this point are coded and implemented into this initial iteration of the project.
- **Testing:** Once development is done, a series of testing procedures is carried out to identify and locate any potential bugs or issues that might arise.
- **Evaluation:** At the end of each iteration, a thorough evaluation is executed, which allows the entire team, as well as our client, to examine where the project is at, where it needs to be, what can or should change, and so on.
- **Deployment:** This stage is the final stage. Here the project is implemented into production after the stakeholders are happy with the project, and enough iterations have been done.

3. Documentation & Artifacts

We have identified deliverables that are produced from the development process:

Documents	Content
Project Plan	High-level project schedule, including milestones, deliverables, and resource allocation.
Requirements Specification	The functional and non-functional requirements of the AudioNow system, as given by MediaFun.
PoC Documentation	A report on the Proof-of-Concept demo, explaining its functionality, limitations, and feedback.
Architecture Document	Detailed architecture including system components, APIs, database schema, and integration points.
UI/UX Prototypes	Figma designs of the user interface for mobile, web, and tablet versions of AudioNow.
Iteration Documentation	Details of each iteration, progress, and other implementation notes.
Test Reports	Detailed reports of all testing (manual, automated, performance), showing pass/fail rates, bug lists, and fixes.
QA Report	Comprehensive report on final system testing, including security, scalability, and user experience tests.
User Acceptance Testing (UAT) Report	Summary of feedback from the final UAT with MediaFun Inc., including any last-minute changes.

Delivery Documentation	Installation guides, user manuals, and system configurations.
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4. Testing & Metrics

4.1 Testing Process

The testing process is carried out during 3 steps of each iteration. At the development phase, unit testing, integration testing, and system testing are performed. They will collect code coverage and return results for each test. During the actual testing phase, select user groups and testers will test different features for useability, stability, and performance. They will deliver bug reports and performance benchmarks. For the quality assurance phase, detailed tests such as stress testing, load testing, security audits are brought in. They will reveal any vulnerabilities and potential bugs. Final bug fixes are also implemented at this phase.

4.2 Reporting Process

After each iteration, developers deliver progress updates to the consultancy. Furthermore, after every testing cycle, a summarized test report, which included all issues encountered and their fixes, is produced and sent to the consultancy.

For the consultancy, they are responsible for organizing monthly progress reviews with MediaFun. These sessions include demonstrations, testing results, and feedback collection. Detailed reports are produced to be used in the next iteration.

DECLARATION OF AI USAGE

ChatGPT was used for generating ideas for part 3 (Documents and Artifacts) and proofreading of the whole document.

REFERENCES

Banks, F. (2016). *Iterative Model: What Is It And When Should You Use It?* [online] blog.airbrake.io. Available at: <https://blog.airbrake.io/blog/sdlc/iterative-model>.