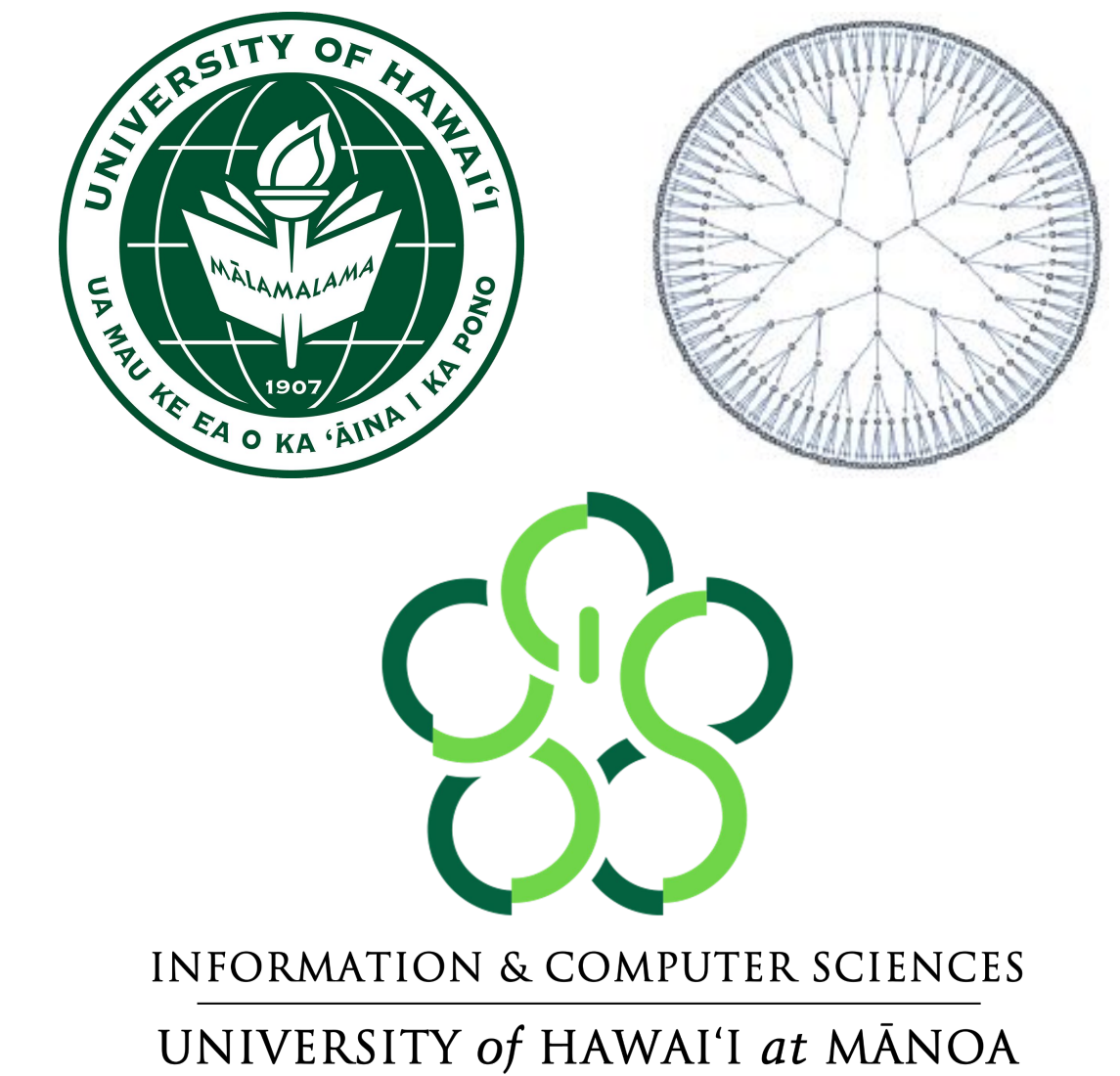


Intellij Plugin to Support Morea Development

Adrian Tam, Benjamin Kim, Raphael Bumanlag

Sponsor: Dr. Philip Johnson

ICS 496 Capstone Project – Spring 2023



Introduction

- The Morea framework was developed by Collaborative Software Development Laboratory, Department of ICS, and UHM. Morea is designed differently from conventional teaching curriculums as it divides course content into modules which contain pages/content further divided into outcomes, readings, experiences, and assessments.
- Creating new Morea module directories and page files is not trivial as it requires manually copying and pasting from existing files.
- Additionally, when adding or deleting pages, users must remember to update their module config file, which can be easily overlooked.
- Since local Morea development is primarily done using the IntelliJ IDE, we created a plugin that eliminates these manual tasks, automates repetitive processes, and reduces errors. It simplifies development, allowing users to focus on creating captivating content.

Methodology

To manage the software development process, we adopted the Issue Driven Project Management (IDPM) methodology. This approach allowed us to effectively address and resolve project-related challenges by focusing on specific issues or tasks.

Throughout the development cycle, we followed a structured approach of creating deliverables every 2 to 3 weeks. This enabled us to maintain a consistent pace and ensure progress on the project. Additionally, we actively engaged with our client, gathering feedback on desired features or necessary changes.

Roles within our team were assigned as follows:

Adrian: Meeting Scribe

Benjamin: Communications Lead

Raphael: Requirements Lead

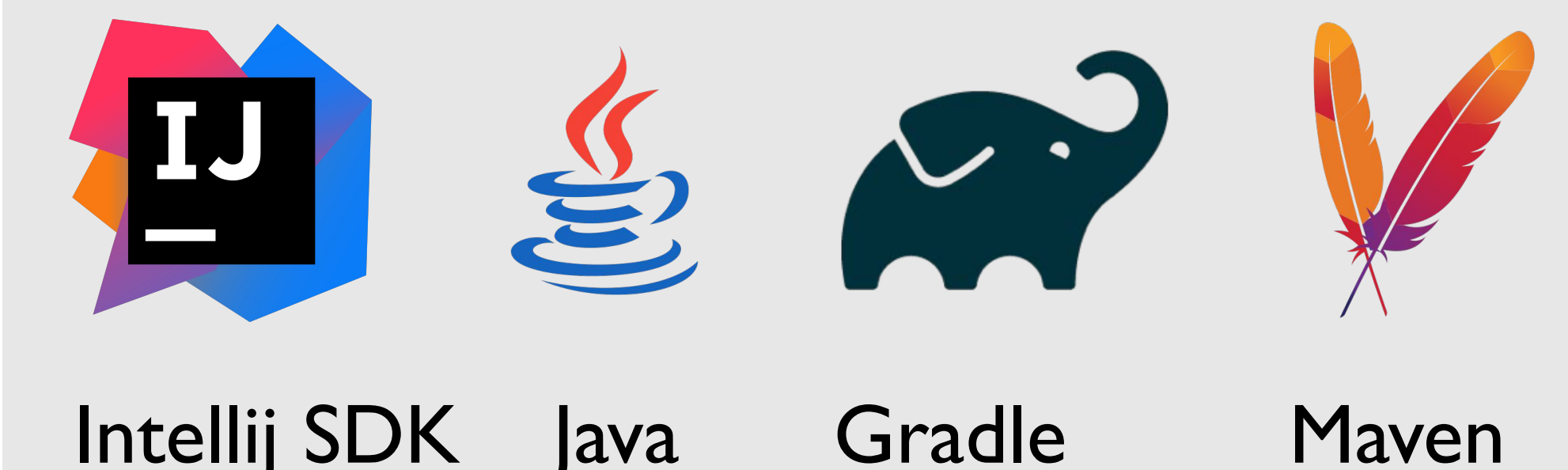
As part of our collaborative approach, we adopted a shared responsibility model for the roles of Test Lead and Technical Lead within our team. This meant that all team members actively participated in fulfilling these responsibilities, contributing their expertise and skills to ensure the quality and technical aspects of the project.

By implementing the IDPM methodology and allocating specific roles and responsibilities, we fostered an efficient and collaborative environment that facilitated effective project management and development.

Solution

- Morea Module:
 - Menu option appears when user right-clicks “Morea” directory to create a new module
 - Module directory is created according to user input, module.md contains appropriate YAML front matter
- Morea Page:
 - Menu option appears when user right-clicks “module” directory to create a new page.
 - Creates page in module directory based on user selected type and input.
 - Prevents creation of page if a file within the project shares the same morea-id.
- Auto update on add/delete:
 - When a user deletes or adds a page to a module, the module config file will adjust accordingly.
 - Manual update option is included as a fail-safe feature.

Technology Stack

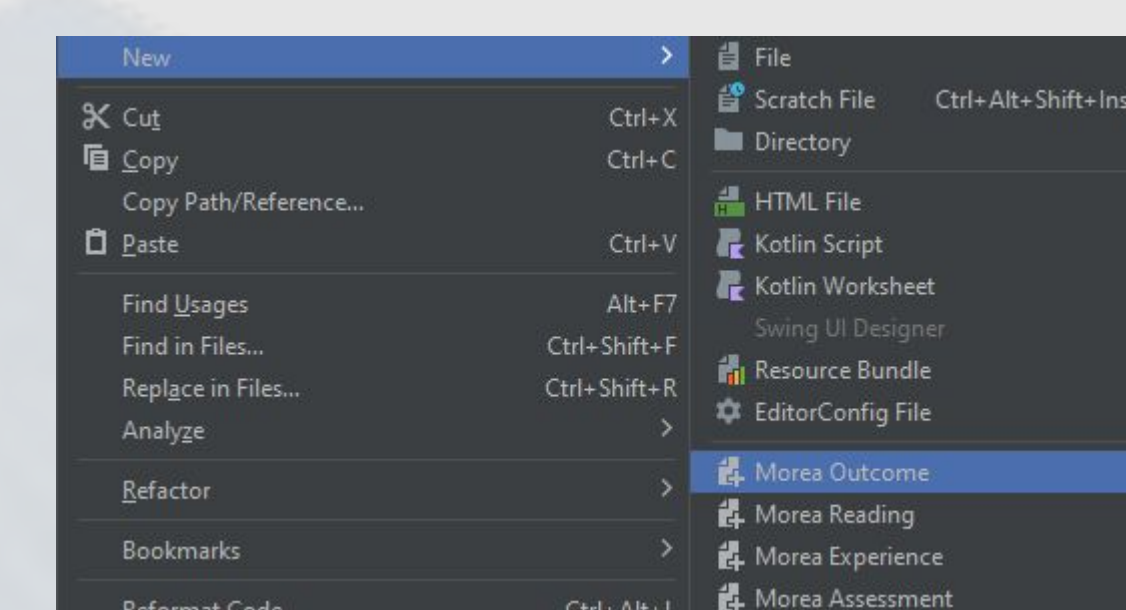


Challenges

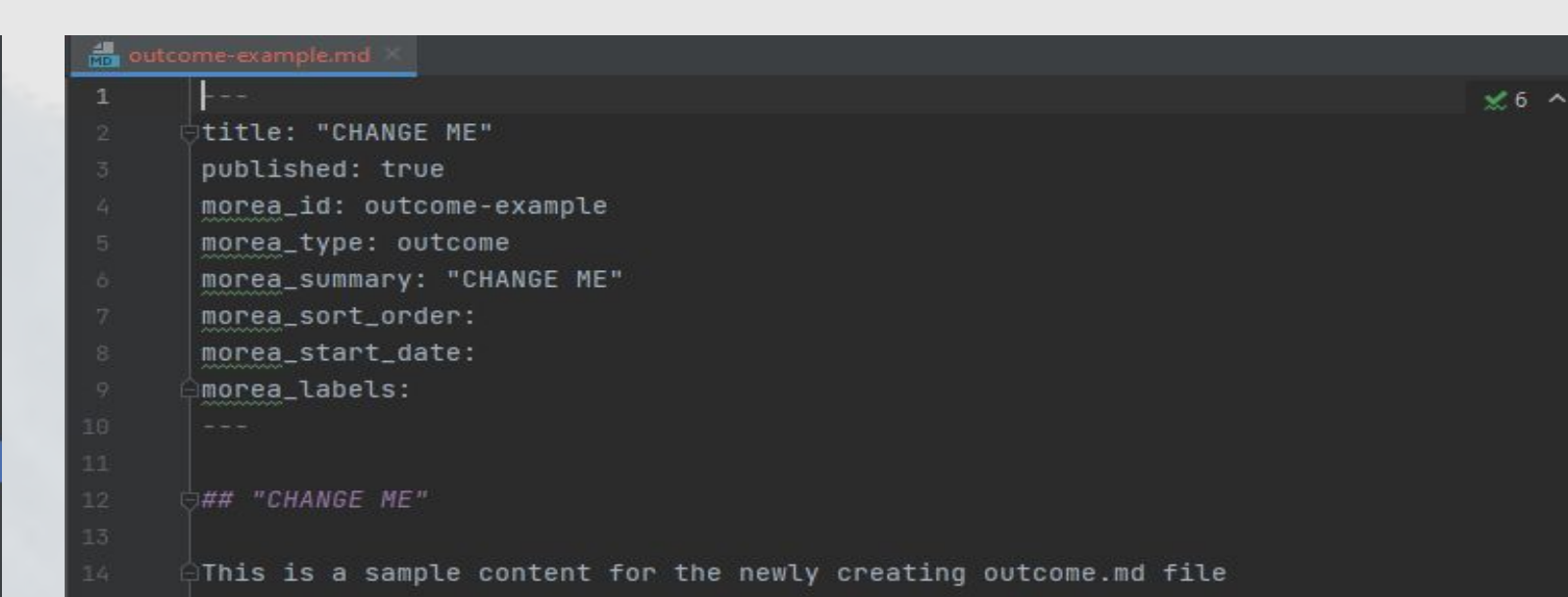
- No previous experience in developing Morea websites or IntelliJ plugins.
- Limited documentation and resources on IntelliJ plugin development using Java as the preferred and actively supported language is Kotlin.

Learnings

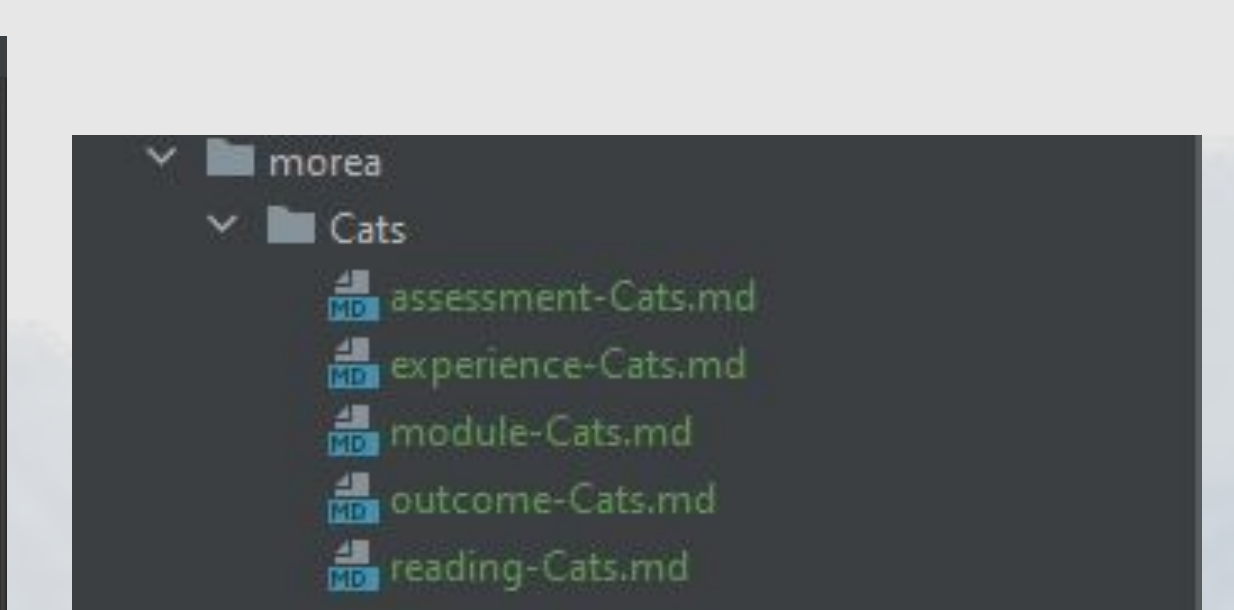
- Improved Java and Github proficiency.
- Gained experience with using IntelliJ SDK for plugin development.
- Gradle for build/deployment
- Maven for dependency management.



Create Morea File Button



Template File on Creation



Create Entire Folders