Criteria A: Planning

Problem Definition

Baybayin, a pre-colonial writing system for Tagalog used by early Filipinos, was largely replaced by the Latin alphabet during over three centuries of Spanish colonization. Today, less than 1% of the Filipino population can read or write Baybayin (INT-gem.bmen).

A Filipino high school teacher aims to revive and teach the ancient Tagalog script to students. The primary challenge he faces is the absence of adequate resources and tools for teaching and learning the ancient script. He also anticipates students' struggle with real-world application due to Baybayin's limited usage in the modern context. The lack of comprehensive references and the lack of accessibility to a Baybayin keyboard and Baybayin character support across different networking platforms also make it difficult to even share insights about the script and collectively enhance Baybayin proficiency.

See appendix A for client consultation proof.

Proposed Solution

The proposed solution to address the challenges faced by the teacher and students in learning Baybayin is a mobile application called 'Baybai'. The application gets its name from the root word of 'Baybayin' which is 'baybay' meaning 'to spell' and 'bai' a Filipino expression which means friend. Developed using Python and KivyMD with the database handled using SQLite, the app offers an accessible and engaging platform for learning the Baybayin script, allowing students to conveniently practice it outside the classroom. It offers a comprehensive learning experience with flashcards. The app includes a translator feature that allows users to easily translate Tagalog words and phrases into Baybayin characters, facilitating practical application in real-life contexts. Furthermore, the app has its own social networking platform to enable collective learning. With its user-friendly interface, comprehensive learning resources, and focus on consistency and growth, 'baybai' empowers students to revive and master the Baybayin script effectively.

Rationale for Proposed Solution

Mobile Application
The client notes mobile phones' prevalence among students makes a mobile app the most accessible solution for their goal.

Flashcards-Based Learning
Flashcards are known for their effectiveness in promoting active recall and spaced repetition, aiding in long-term retention and comprehension (Kornell). To add, flashcards provide visual

cues, helping students associate Baybayin characters with their meanings, making the learning process more engaging and memorable (Kornell).

Python, Kivy, and Flask
Python and Kivy enable cross-platform mobile app development, ensuring broad compatibility (Alomari et al; Kivy). The integration of Flask with Python and Kivy for the app's social network feature streamlines development and maintains a consistent user experience, avoiding the need for users to navigate between different technologies.

SQLite
Efficient and Reliable: SQLite offers high-performance data storage and retrieval capabilities, ensuring smooth data management within the mobile application, including user progress tracking and storing translation data (*In-Memory Databases*).

Design Statement

I will design and make a mobile application for a Tagalog teacher in a Philippine high school, focusing on Baybayin learning. Key features include flashcards, a translator, saved flashcards, and an online forum. Developed with Python, KivyMD, Flask, SQLite, and the PyCharm IDE, the project will span 16 weeks, evaluated against predefined success criteria.

Success Criteria

No	Success Criteria	Problem addressed
1	User progress will be kept independently using an encrypted login system.	"As the script is not part of the national curriculum, and he is the sole faculty member knowledgeable in its reading and writing, individualizing instruction for a large class size proves challenging, adding complexity to the teaching process."
2	The flashcards in Learning Mode show Baybayin characters and when tapped, reveal the corresponding Tagalog translation.	"absence of adequate resources and engaging tools for teaching and learning the ancient script"
3	The app allows the user to transcript Tagalog words to Baybayin script.	"He also anticipates students' struggle with real-world application due to Baybayin's limited usage in the modern context. The lack of comprehensive references"
4	The app allows the user to copy the transcripted word to their clipboard.	"He also anticipates students' struggle with real-world application"

		"the lack of accessibility to a Baybayin keyboard and Baybayin character support across different networking platforms"
5	The app allows the user to 'star' or save a flashcard for later reference or memorization.	"This problem also creates another challenge - enhancing memory recall and knowledge reinforcement - as the script is not used outside the classroom."
6	App contains an online forum that allows users to add post and interact with other users who want to learn Baybayin.	"difficult to even share insights about the script and collectively enhance Baybayin proficiency."

Table 1. Success Criteria

WORD COUNT: 500