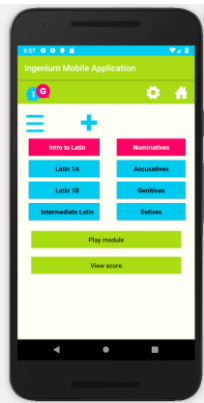


# Ingenium Mobile Application

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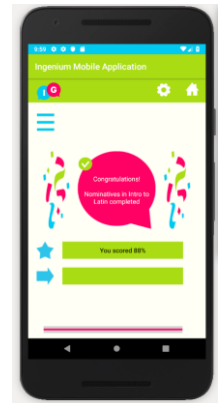
Supervisor: Chalinor Baliaug Client: No client



Select a class and module



Play the game



View your score

## INTRODUCTION

Ingenium is an Android application which gamifies the language learning process. The application allows tutors to create custom datasets of language courses they are teaching which the student can import into the application. The application generates games for the student to play through, augmenting language learning materials and adding to the learning experience.

While there are many language learning applications in the marketplace, there is a niche for an application which allows customisable content where the tutor controls the syllabus.

## DEVELOPMENT

Ingenium was developed using Android Studio in Java and features a local SQLite database. Unit testing was performed inside Android Studio, implementing JUnit, Espresso and Hamcrest.

Based on wireframes, UI development began with creating UI components such as buttons and icons. In lieu of a breadcrumb trail to keep track of menu clicks, the UI was designed so that the user can see which options they have selected with a glance.

In the early stages, backend development focussed on reading datasets from CSV files and storing that data in the application. As the application progressed, a local database was added so that the dataset could be read and stored in the database and retrieved when a game is started.

There are four different types of games in Ingenium and the games are randomly generated so that no two games are the same. Some games use a flashcard system, while another requires the user to match pairs of words with the correct translation. Tutors not only include words with their translations in the dataset, but also sentences where the student must identify which word in the sentence is missing.

Since Ingenium allows the tutor to create a custom dataset, the application can manage many different languages. The team have included datasets in Latin and German to showcase the application.

The project followed the OpenUP/Basic methodology which gave the project direction and structure.

## CONCLUSION

Team Ingenium divided the requirements between core and extended requirements. The core requirements were a focus for the project and all core requirements were met. The extended requirements offer a direction for future development of the application.

Ingenium is aimed at users in a classroom settings or environments with a student/tutor dynamic, and the application is intended to enhance the language learning experience. The application is intuitively designed, flexible and customisable, filling a gap in the Android marketplace.