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| Text  Description automatically generated | MOBDEVE Major Course Output |
| BSCS-ST1, BSIT2, BS<specialization><superscript> |
| intelliTest |
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**Description**

intelliTest is an application that can auto-generate holistic mock exams that follow a structured format, such as DepEd’s K-12 KPUP (Knowledge, Process, Understanding, Product/Performance) format, to prepare students for their actual exams. The application can take in the user’s notes, lecture slides, readings, and other forms of content, which are then analyzed and processed by OpenAI’s LLMs to generate the user’s mock exam that follows the structured format. The LLM’s output will be processed and parsed by the application to provide a user-friendly form layout for answering these mock exams.

When a student generates a mock exam, these would contain exam types such as simple types of Remembering and Understanding (Knowledge) of Multiple Choice, True or False, Matching Type, or Fill in the blanks, to complex types such as Problem Solving, Programming, Concept Mapping, and Essays.

Aside from generating mock exams, the app can also auto-grade these mock exams so that students can receive immediate feedback and learn from their mistakes. The simple exam types can be auto-graded due to their linearity, while the LLM can evaluate the complex exam types to provide feedback and grades using its own generated rubrics that the student can also use as a guide for answering the mock exam.

**Services / APIs**

Camera

* To take pictures of notes and convert them to text, handled by Google ML Kit on Android

Google ML Kit on Android (consult with sir if processing would be better server side or client side)

* To recognize and extract text from images using OCR to be formatted in a readable and understandable format by the OpenAI API

Web Server

* To handle communication between OpenAI API and the user’s application
* To handle document and image parsing to be understandable by OpenAI’s LLMs
* To communicate with the PocketBase database instance storing the following:
  + User Profile Information (email, grade level)
  + User’s generated mock up
  + User’s exam results with corrections

OpenAI

* Used to generate mock exams in a JSON format that will be parsed and sent to the Web Server, which in turn will send it to the appropriate user as a response.
* Used to handle the grading of complex exam types, given a rubric or answer key (similarity and contextual checking)
  + Provides feedback including the grading of the question, and comments based on the generated rubric/criteria.

**Functions**

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| **Function** | **Description** |
| Register | The user must first register through their Google account using Google Auth. The name and email will only be collected to serve as identification of the user. |
| Log-in | The user must log-in through Google before accessing their account and the rest of intelliTest’s features. The same button for registering will automatically turn to the |
| Onboarding | A modal with a simple onboarding guide on how to use intelliTest will be shown to the users. This view can also be inherited by other types of modals such as app updates, announcements, and more. |
| View Main Screen (Home) | The user can view a bottom navigation menu that leads to the following pages: “Exam Generation”, “My Exams”, and “Profile/Settings”.  The page layout contains a Call to Action button to create a mock exam, a Card to show the user’s latest generated mock test, a reminder Card of the last mock exam score, and a randomly selected tip/advice for studying. On further scrolling, |
| View Program List | The user can view the list of available of volunteer programs, each program containing basic details of the event. The list will be provided via a remote web server. |
| View Program Details | Once a user selects a program, the app will provide the complete details of the event. |
| Filter Programs | The user can filter through the programs based on date/time, advocacy (e.g. education, housing), and location. |
| Register/Join Program | The user can join a program (log-in is required if the user hasn’t log-in yet). This will update the remote database. |
| Program Notification | The app will notify the user three days, and a day before a registered event. |
| Check-in | The user can “check-in” when he is on-location. The app will verify the user’s participation by checking if the location and time matches. |
| Feedback Notification | The app will notify the user to share his experience days after a program. |
| Feedback | The app will allow the user to share his photos and experience on Facebook. |