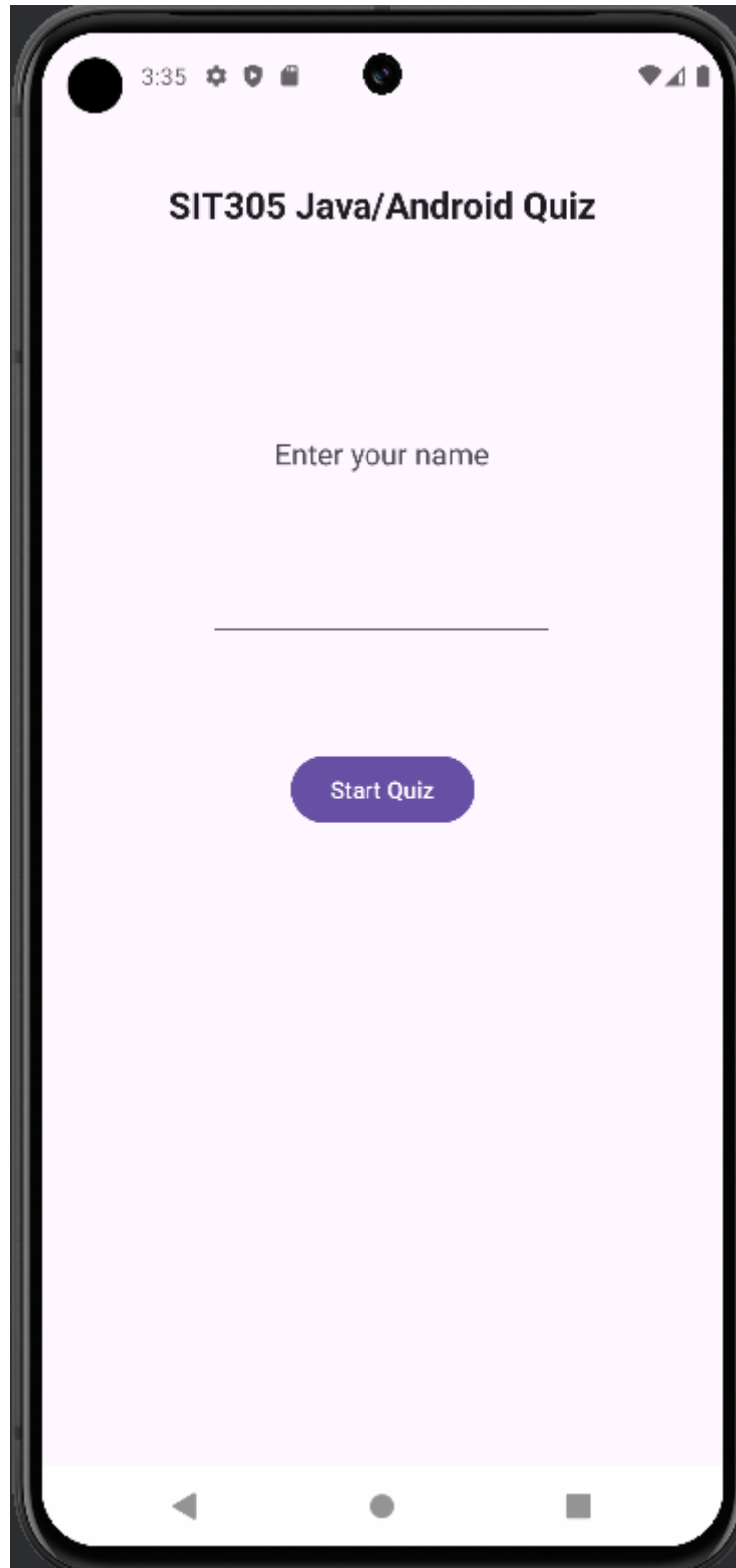


Task 3.1C – SIT305

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Github link: <https://github.com/bgrando24/Task-3.1>

Video demo link:

<https://deakin.au.panopto.com/Panopto/Pages/Viewer.aspx?id=29e0d3e4-22e3-4262-9b34-b157005530f0>

Exploring ways of harnessing Llama 2 and similar LLMs for the quiz app.

Llama 2 and other similar LLMs have emerged as powerful tools in recent times, specifically in the areas of natural language processing and content generation. With the LLMs ability to human-like text and content in many cases, they bring potential opportunities for enhancing the 3.1C quiz app.

One of the primary areas where LLMs excel is in textual content generation based on an input prompt. Specifically, this ability could be leveraged to create a dynamic quiz question generation system or alter previously defined questions. Such a feature could be used to either generate new questions each time a user begins a quiz (as well as a new set of answers), or could also give the user the ability to input an area of knowledge they want to be quizzed on, and the LLM could produce a set of questions based on the area of knowledge.

Furthermore, an LLM could be used to create a dynamic difficulty system for the quiz. For example, a programmer could define a base set of question topics/areas as a guide for the LLM that define what kind of question to generate and the level of difficulty. For example, the base topic might be “generate a difficult question in relation to class inheritance in Java”. Therefore, the LLM can allow for the quiz to have dynamic difficulty without the programmer explicitly defining and writing out questions for each difficulty level.

Additionally, the ‘conversational’ ability of an LLM could be used to provide detailed feedback or knowledge to a user in regards to a quiz question. For example, if a user were to get a question wrong, there could be a “Explain the answer” button that provides the question and the user’s answer to the LLM, and the LLM could provide an in-depth explanation on the question, with further ability for the user to converse with the LLM.

In the context of a quiz app that is geared towards enhancing a user’s learning, an LLM could be used to help map out a ‘learning journey’ for a user based on the topic of study or interest. For example, a user may wish to revise for an upcoming exam related to Java programming. The user could input the topic of interest (Java) to the app, what level of

knowledge they already have (this could also be determined by some qualifying questions), and if there are any specific areas they want to focus on. The LLM could then help map out a set of quizzes that vary on specific areas of the topic, difficulty level, and may dynamically change based on the user's performance (for example, generate quizzes that focus more on areas the user struggles with).

By incorporating an LLM such as Llama 2 into the quiz app, a wide range of possibilities and opportunities are introduced for expansion of the app. Features such as enhanced question generation, question feedback and explanation, dynamic difficulty and study-focused quiz generation can help to expand the app's capabilities.