**GenAI Bootcamp Homework**

**Week 0**

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**Business** **Goal:  Japanese Sentence Constructor**

A chat agent that acts as a teaching assistant to guide students in translating a target English sentence into Japanese. The teaching assistant is not there to provide a direct answer, only guidance.

**Technical Uncertainty**

1. How well can an AI-powered assistant perform a very broad task?
   * An AI-powered Assistant will not perform well on broad tasks. This is because the requested information must be succinctly identified in the User Query for the system to provide a tailored response. Even the wording on the request can generate significantly different output from the assistant.
2. Would a very broad task be better performed by dividing it into subtasks with specialized agents?
   * Correct. This is the divide and conquer method. Breaking the larger task into smaller components allows for a better understanding of the contributing subtask needed to complete the broad task.
3. Does using an AI-powered assistant make for a good place to rapidly prototype agents?
   * An AI-powered assistants would be an excellent tool to quickly prototype agents when developing a solution. They would allow for the development of the test prototype and all subsequent modifications. In addition, given that it is AI-powered, errors generated in the code can be quickly debugged and ratified. Additionally, the code can be exported to multiple platforms and languages.
4. How could we take the agent we built in an AI-Powered Assistant and reimplement it into a stack that allows for direct integration into our platform?
   * This only works if the original agent is properly designed and built, with clearly defined inputs and outputs. In addition, the formatting of those I/O must be clearly defined and mappable to the inputs on the secondary platform. If not, it might be necessary for the implementation of middleware.
5. How much do we have to rework our prompt documents from one AI-powered assistant to another?
   * It depends on how well the original agent was written and the user interface. This is because some are more directed in ways that information entered/required and the size and format of the windows can be varied.
6. What prompting techniques can we naturally discover working in the confines of an AI-powered assistant?
   * The techniques will be varied but some of the more common types are through trial, iteration, and refinement.
7. Are there any interesting innovations unique to specific AI-powered assistants for our business goal?
   * Once again, it depends on the purpose and focus of the application, tools are constantly being developed to help automate and simplify the process of application development. Below are a few tools/applications that are best suited for different contexts.

Automated AI Agents (APIs, tools) : GPT-4 Turbo

Processing long reports, contracts: Claude 2

Analyzing text + images + videos: Gemini

Privacy-focused AI, no cloud reliance: Mistral, LLaMA

Enterprise chatbots, workflow automation: Rasa

1. What were we able to achieve based on our AI-powered assistant choice, our hardware, or our budget limitations?

Achievements from AI Choice:

1. Task-Specific Optimization → If workflow automation was key, GPT-4 or Rasa delivered.
2. Long-Form Processing → If working with contracts & compliance, Claude enabled deep document analysis.
3. Budget Optimization → If privacy & cost were critical, Mistral/LLaMA helped reduce cloud AI expenses.
4. Multimodal AI → If image + text analysis was needed, Gemini’s capabilities proved useful.