Student Resources

See other pages for information.

Curriculum Outline

**Curriculum Outline**

## 

## **Bootcamp Goal**

### **The Problem**

The applications and benefits around GenAI have been hyped due to rampant VC investment resulting in confusion and mismatched expectations. From Devs, DOEs and VPs there is technical and business uncertainty around GenAI.

### **Target Audience**

The goal of this bootcamp is to help the tech industry as a whole:

* To understand both the landscape and boundaries of GenAI
* To critically think and troubleshoot how to build real-world GenAI workloads

This bootcamp aims to tackle all levelsfrom Beginner to Expert to Enterprise and will use a Maturity Model approach to learning. eg.

Level 100 — Beginner

* AI Powered Assistants and Prompt Engineering

Level 200 — Intermediate

* AI as a Service and Cloud Services
* Building agents locally with open-source models and Langchain

Level 300 — Advanced

* Training, Optimization, Quantization

Level 400 — Enterprise / Expert

* Deploying for production
* Rightsizing for Compute eg. AI Accelerators

## 

## **Spend Considerations**

While we will do our best to utilize free-tier services, some videos may require spend.

We will do our best to point out possible spend-traps and best practices to avoid spend.

**You are responsible for your own costs and you need to be diligent about cloud spend.**

### **Cloud Spend (OPEX)**

* Generous free-tiers
* Metered-billing (You pay only for what you use)
  + Unexpected spend due to misconfigurations or forgotten running resources
* \*Less configuration challenges
* More options of compute

### **AI PC (CAPEX)**

* You pay upfront a single time cost
* What you have is what you have
* If it breaks, then you are done (get the warranty)

## **Technology Requirements**

We are going to be using a mix of cloud-based compute and local compute.

### **Andrew’s Specs:**

During this bootcamp Andrew will be utilizing a range of local hardware and software:

| Apple | Windows Main | Intel AI PC DevKit |
| --- | --- | --- |
| * Apple M1 Pro (2021) * 16 GB RAM * 1 TB storage * macOS Sonoma 14.5 | * i5-6500 (2015) * Geforce RTX 3060 12GB * 64 GB RAM * Windows 10 * WSL 1 | * Lunar Lake (2024) * 32 GB RAM * 512 GB storage * Windows 11 * WSL 2 |

There may be instructional videos you will not be able to perform since there is a hard-requirement for specific local hardware.

### **AI PC Consideration**

In 2025, “AI PCs” will be more common for developer’s local workflows which is a special type of CPU that includes additional capabilities like iGPU and NPUs.

AI PCs will allow you to run a wider range of AI Models and LLMs locally without the need to buy a expensive graphics card.

If you want to follow through with the instruction videos for local compute with minimal issues we recommend getting an AI PC.

## **Prerequisite Knowledge**

* GenAI Essentials Course (Strongly Recommended)
  + This course contains all fundamental GenAI content for all levels.
  + Do your best to progress as far through these materials as possible before the start of the bootcamp.
* [Python for Beginners](https://www.youtube.com/watch?v=eWRfhZUzrAc&list=PLWKjhJtqVAbnqBxcdjVGgT3uVR10bzTEB)
* [PyTorch for Beginners](https://www.youtube.com/watch?v=V_xro1bcAuA)
* [Tailwind CSS for Beginners](https://www.youtube.com/watch?v=ft30zcMlFao)
* [React for Beginners](https://www.youtube.com/watch?v=DLX62G4lc44&list=PLWKjhJtqVAbkArDMazoARtNz1aMwNWmvC)
* [GitHub Foundations](https://www.youtube.com/watch?v=Jdc0i7RcBv8&t=1462s)

> GenAI Essentials Course will be out in early November.

### **What about AI Cloud Certifications?**

There are specific cloud certifications for AI and GenAI eg. AI-900, AI-102, AIF-C01, NCA-GENL

While these do teach AI and GenAI they are often focused around a specific vendor’s AI offering and will be missing fundamental broad AI knowledge. While you can complete these courses to prepare for this bootcamp be aware of their limitations.

## **Prerequisite Technologies**

> This has not been finalized yet, please wait for further instructions.

> The instructions to set up all these accounts will be in the official playlist.

* AWS Account
* Azure Account
* GCP Account
* Intel Tiber Developer Cloud
* CIVO Account
* Hugging Face Account
* Lighting.AI
* GitHub Account
* Gitpod Account
* GitHub Codespaces
* MongoDB Account
* Lucid Charts
* Vercel / v0

## **Time Commitment**

Let’s fully detail the time a student will need to commit to fully experience this bootcamp over the 6 weeks:

| **Task** | **Estimated Time** |
| --- | --- |
| **Prerequisite Knowledge**  This is strongly recommended knowledge you will want to obtain prior to the course.  The time commitment can greatly vary, so we’ll provide an average amount of time committed | 10 hours |
| **Prerequisite Technologies**  You need to register specific cloud service accounts. This needs to be performed before the course starts | 2 hour |
| **Classroom time**  Each class is time-blocked for 2 hours.  Let’s also assume you might want to watch back the video and you are attending AfterClass QnA | 3 hours per week  6 weeks = 18 hours |
| **Homework time**  After each live-class there is a series of videos you need to complete.  Homework is not necessary to complete, you will be provided multiple challenges to perform on your own.  It's your decision to decide how much time you wish to commit to homework. | 4-10 hours per week  6 weeks = 24-60 hours |
| **Student Discussion**  In the Discord and email, we’ll send simple polls. We’ll have office hours where you can optionally attend. | 1 hour per week  6 weeks = 6 hours |
| **Total Time Commitment** | 54-90 hours |

## **Project Requirements**

All Students must Create a new repository exactly called gen-ai-bootcamp-2025

* The repo must be public
* Do not clone the example repo:
  + Eg. do not clone ExamProCo/free-genai-bootcamp-2025,
  + eg. do not clone omenkingfree-genai-bootcamp-2025
* Do not fork the example repo
  + eg. do not fork ExamProCofree-genai-bootcamp-2025,
  + eg. do not fork omenking/free-genai-bootcamp-2025

Project Details

Andrew’s Message about Project Details: <https://youtu.be/Tae4osFwWXQ>

**Business Scenario**

You've been hired as an AI Engineer for a Japanese Language Learning School to extend the language offering and also augment the learning experience for students between instructor-led classes.

The school has an existing learning portal and learning record store.

You've been tasked to:

* build a collection of learning apps using various different use-cases of AI
* Maintain the learning experience the learning portal using AI developer tools
* Extend the platform to support various different languages

**Learning Apps**

**Considerations**: This is a wish list of potential projects around the business use-case and we may not build all these ideas.

**Daily Life Visual Novel Generator**

Build a learning app that takes in a town, and allows the player to visit key locations and have daily routine conversations with variation.

* Must generate out consistent characters
* Must maintain the chat history of multiple characters

**Japanese Text Adventure**

Build a text-adventure learning app that slowly introduces Japanese vocabulary, and have all primary actions needed to perform writing Japanese.

**Japanese Sentence Constructor**

Build a learning app that has the user input an English phrase, and the app will assist them with translating to Japanese without directly providing them the answer.

**Sign to Speak [Rob]**

Build a learning app that allows users to practice ASL finger-spelling via a webcam

The app will present single letter vocabulary and the student will attempt to sign the letter

**Subtittles to Vocabulary [???/Derek]**

Build a learning utility that will take a movie subtitle file and extract all the vocabulary.

* You must use LLM to extract the vocabulary
* You need to use offline batch jobs to provide the lowest cost
* You must must prepare the data in json structured output
* You must evaluate the outputted vocabulary to be correct

**Speech to Learn**

Build a learning app that allows users to practice speech in a target language.

The app will present single word vocabulary and the student will attempt to say the word.

* Evaluate possible Automatic Speech Recognition (ASR) solutions
* Inference of speech-to-text for MVP must be under 1s
* Determine the the lowest cost to run ASR at scale with 10,000 concurrent users

**Japanese Teaching Assistant**

* Requirement [Show us how RAG works]
* Extract body of text and be able to ask questions
* https://www.youtube.com/watch?v=OlZx\_o60qAs&list=PLUqu4MKiV5q83qPR7zI7w7ucLWerAT0R5

Grading Rubric

**Grading Rubric**

**🚧 WIP:** When we have finalized the curriculum we will update the Grading Rubric

We grade on based on the following fur metrics:

* **Completeness** - Did the student finish their required homework?
* **Correctness** - Did the student implement the work correctly?
* **Effort** - Did the student put additional effort eg. Homework Challenges
* **Communication / Documentation** - How well did the student communicate and document for each.

FAQs

### **What is the Free GenAI Cloud Project Bootcamp?**

The Free GenAI Cloud Project Bootcamp (aka Free GenAI Bootcamp) is a free comprehensive 6-week training program that aims to equip individuals with the necessary skills and knowledge to successfully design, build, and implement a GenAI project. Through hands-on experience, participants will learn how to apply their GenAI expertise in a practical setting and showcase their abilities to potential employers or organizations.

### **Why should I attend the GenAI Cloud Project Bootcamp?**

* **To acquire new skills**: GenAI is a rapidly evolving field and staying up-to-date with the latest technologies and best practices is essential for success. This bootcamp will provide you with the practical skills and hands-on experience you need to be competitive in the job market and advance your career
* **To acquire hands-on experience**: The bootcamp is designed to provide an immersive, practical learning experience through project building, giving you exposure to the latest technologies and industry best practices
* **To expand professional network and connect with the community**: The bootcamp offers a platform to connect and network with other industry professionals, which can be valuable for building connections and learning about new career opportunities

### **Who should attend the GenAI Cloud Project Bootcamp?**

This bootcamp aims to help individuals for all levels.

It’s not our expectation that everyone complete all parts of the bootcamp, do you best to follow along or watch and acquire as much information as you can.

### **Where can I register?**

You can signup on [www.exampro.co](http://www.exampro.co)

<Insert Video Link on how how to signup>

## **Bootcamp Format and Duration**

### **Is this a self-paced or a live-instruction bootcamp?**

This bootcamp is a combination of live instructions and self-paced learning. Each week, there will be a live stream session conducted via Youtube, where students are encouraged to participate in real-time. For those who are unable to join the live sessions, the recorded content will be available for catch up at a later time.

There will also be a series of recorded videos each week which is your homework.

### **When are live classes?**

Live classes occur on Saturdays at 12 PM Noon ET (Eastern Time).

### **What is the format of a classroom session?**

The live-class is focused on providing real-time instruction, where students will implement the concepts in their own local and cloud accounts alongside the instructor. To ensure the most efficient use of live instruction time, any lecture content will be provided to students in pre-recorded format prior to the class as a prerequisite.

### **Where are live classes hosted?**

Classes take place on Youtube on the ExamProChannel

### **How long is each class session?**

Each live-session class is strictly set for 2 hours.

### **How long is each class session?**

Each class is strictly set for 2 hours.  
There should be around 1 hour of work and another hour to adjust the pacing of the class session.

Please see [Curriculum > Time Commitment](#_uuhttqsz25t1) for idea of time invested.

### **How much time should I dedicate weekly for the GenAI Cloud Project Bootcamp?**

The classes are 2 hours long, and the optional homework can take anywhere from 2 to 10 hours to complete, depending on your level of commitment. You can attend office hours, which are 1 hour long, or participate in student discussion on Discord. The amount of time you spend on the homework and extra activities is up to you.

Please see [Curriculum > Time Commitment](#_uuhttqsz25t1) for idea of time invested.

## **Prerequisites and Experience**

### **Is there an age limit?**

There is technically no age limit.

You will need to have a credit card to access specific cloud services.

We are utilizing free-tier as much as we can and will do our best to inform of you possible spend.

If you’re younger than 18, you’ll need parent/guardian support.

### **Can I attend this bootcamp if I’m not located in Canada or Canadian?**

Yes. It’s virtual.

### **I can’t sign up for the cloud account, can I still participate?**

This is a Bring-Your-Own-Account (BYOA) project bootcamp.So to participate you need to ensure you are able to create accounts for the possible cloud services we plan to use.

### **What is the prerequisite knowledge or skills required to participate in the GenAI Cloud Project Bootcamp?**

We are creating a prerequisite course called “GenAI Essentials”.

While there are multiple GenAI certifications from multiple providers, (and we have created them) they are incomplete. Please go through our GenAI Essentials course as best you can prior to the bootcamp start date.

## **Curriculum and Skills Covered**

### **What will I learn?**

Alot. We have a [lucid chart](https://lucid.app/lucidchart/956919b6-2736-4b0a-897b-fe80884b4698/edit?viewport_loc=-1128%2C-2761%2C2512%2C1362%2C0_0&invitationId=inv_ba782543-2a39-427a-bb5f-bbd579da59bf) if you want a general idea of scope of learning:

### **Is there homework?**

Yes, there will be homework each week.

You can think of them as “stretch goals” that are optional for you to do.

### **Will you review my homework?**

Each week you submit an update on your progress via form.

We do homework review at the end of the bootcamp when issuing out badges.

Additionally, office hours can also be utilized for the same purpose, to discuss homework challenges.

## **Hands-on Project**

### **Can I share the project that I work on publicly?**

You are encouraged to share your progress publicly. I would recommend having a public repository and regularly updating it to show progress over time.

It would also be beneficial to include any notes or observations collected during the process within the repository.

### **Can I use this project in my résumé?**

Yes, you can certainly do that. However, I suggest making it your own. The goal of this bootcamp is to extend your learning beyond the classroom. I hope this will inspire you to think of new ways to achieve that.

## **Grading**

### **How will I be graded for individual participation?**

Check out the [**Grading Rubric**](https://docs.google.com/document/d/1ib98SsYYwWlqkGWZ_s9u0KFFovn_GtLsEV3JJaJ1890/edit?usp=sharing)

### **Factors to consider when submitting your homework**

#### Writing Your Weekly Standup (Homework Summary)

To ensure you stay on track, please submit a summary of your completed homework before the start of the next class. Think of your summary as a weekly standup report you might deliver if you worked at a tech company. The report should be concise, and include the following information:

* What you accomplished during the bootcamp week
* Any obstacles you faced and how you overcame them
* Details about any challenges you attempted during the bootcamp week

You can make as many submissions as you want prior to the next class date. However, the submission form will lock by the next class date. Once it’s locked, our system will only review your latest submission.

Late submissions are allowed within a grace period, so submitting a few days late won’t result in any penalty grades. However, submitting weeks after the deadline (without agreed accommodation from your instructor) could potentially affect your grades.

#### Completing Require Work

The Todo Checklist outlines the required work you need to complete each week, and each week’s assignment build off the previous week. It’s crucial to complete all the work assigned, as failure to do so could result in falling behind and potential failure in the bootcamp. Note that required work may be assigned as homework after the live-stream, this is separate from homework challenges.

#### Homework Challenges

Homework Challenges provide an opportunity for you to demonstrate your ability to work independently and go above and beyond the instruction-led video or live-stream content. We provide suggestions for challenges, but you are free to come up with your own as long as they’re relevant to the scope of the project. Completing these challenges is a great way to showcase your skills and deepen your understanding of the week’s material.

While completing these challenges are optional, doing so can help you achieve Red Squad status.

Homework Challenges must be documented within the journal directory of your GitHub Repo.

Remember to show “proof of work”. Graphics, links, documents, and other files need to exist in your repo and referenced in your markdown file.

Homework Challenges can be attempted outside of the class and beyond the designated week. However, they should still be completed within the scope of the project and you are encouraged to attempt the challenges each week.

### **How do I qualify for Red Squad?**

The number of Red Squad Badges is limited, so earning this title carries significant prestige.

Although achieving Level 4 in the grading rubric is a significant accomplishment, Red Squad status is determined based on a combination of factors,

We are looking to see how you can push the limits of the project and extend its capabilities.

### **How do I receive a grade?**

In order to be graded, you must be on the official student registry.

You must submit all weeks.

### **When will I receive feedback for my weekly submission?**

We don’t review each week due to the volume of submissions.  
We will review at the end of the bootcamp and provide guidance along the way.

### **How will I be graded for each weekly assignment?**

The grading for each week is a grade level between 0 and 4 for the following

* **Completeness** - Did the student finish their required homework?
* **Correctness** - Did the student implement the work correctly?
* **Effort** - Did the student put additional effort eg. Homework Challenges
* **Communication / Documentation** - How well did the student communicate and document for each.

### **When will my grades be made available?**

It can take several weeks to a month to grade depending on the volume of submissions.

### **How are accommodations and exceptions handled?**

To request accommodations or exceptions, please contact Andrew in advanced.

## **Support and Assistance**

### **What happens if I cannot keep pace with the instructional content?**

Classes are time-boxed for an exact amount of time.

Some students may not be able to keep up with the instruction.

In a live setting, there would be support instructors who could individually help students keep pace with the class. However, in an online setting, it is not possible to replicate this experience.

We will regularly poll students during live instruction to see how pace is keeping up.

### **What are office hours?**

Office hours are a designated time when you can drop in to ask any questions on a group call relating to the cloud project and technologies used.

The question priority:

* Homework questions (how do I solve this?, help I’m stuck)
* Catch-up questions about last week’s instruction (for those doing self-paced or missed a live classroom)
* Broad questions generally about cloud technologies that intersect with our project.

Please note that office hours are not intended for cloud career advice or cloud certification advice.

### **When are office hours?**

Office hours are currently scheduled twice a week Tuesday and Thursday.

Please see the calendar on the main marketing website.

We send reminders in the Discord.

### **Where are office hours hosted?**

Office hours take place via a private Zoom meeting.

There is a capacity limit of 100 students for the Zoom call

### **Can I offer to volunteer for the bootcamp in any way?**

If you’re interested in taking your participation to the next level, here are a few options:

* Organize study groups within Discord to review the bootcamp material together
* Create study notes and share them with your fellow students

Please note, we do not currently offer “Volunteer” status for the purpose of including it on your résumé.

## **Discord**

### 

### **I don’t have an invite link to the Discord server, or the link I have to discord has expired how do I get into the Discord server?**

The Discord server is private, and invitations are now closed.

Discord links were sent several times via email with an expiration date prior to the start of the bootcamp.

Registered students who were unable to gain access in time will not have access to the Discord server for the duration of the bootcamp

The reason why is to avoid bots, griefers and trolls that cause issues within the Discord server.

Even if you are registered in the student portal, we aren’t adding valid registered students once the bootcamp has started because:

* we don’t have the administrative capacity to add new students to the Discord server individually.
* We don’t have the moderation capacity to get new Discord users trained to use the Discord server

### **I was in the Discord server but then it kicked me out, asking for me to enter my mobile phone. How do I get back into the Discords?**

### 

There were student accounts that were hacked by bots and posted explicit content that violated our Codes of Conduct (CoC).

Turning on the mobile phone authentication requirement prevents future issues.

If you don’t have a valid mobile phone then you won’t be able to gain access to the Discord server

**I have a mobile phone number attached to my Discord account but Discord is still asking me attach a mobile number, how do I meet Discord to requirements so I gain access to the Discord server?**

There known Discord bug where some students have mobile phones already attached to their Discord account and Discord still asks them for them to attach mobile phone.

We don’t know how to advise students to work around the issue since its a technical issue with Discord. Some students find a secondary mobile phone number (through a family member) and regain access.

### **I was in the Discord but I appear to have lost access can I have a new invite and regain access?**

There are several reasons why you have lost access:

* When we turned on mobile phone verification you did not have a mobile phone attached, so you simply need to attach a mobile phone number to your account
* You violated the Codes of Conduct (CoCs) and were either kicked or banned
* You may have accidentally removed yourself from the server.

Discord invitations are closed, so if you lose access to the Discord, you have lost access for the rest of the cohort.

### **What is the purpose of the private women-only channel on Discord?**

* To provide a safe and inclusive space for women to share their experiences and support each other
* To promote the representation and empowerment of women in the tech industry
* To address issues and challenges that disproportionately affect women and may not be adequately addressed in mixed-gender spaces
* To provide networking opportunities and mentorship in the tech industry
* To help combat discrimination and bias that women may face in mixed-gender spaces
* To foster a sense of community and belonging for women who may feel underrepresented or marginalized in the tech industry

[National Center for Women & Information Technology - By the Numbers](https://ncwit.org/resource/bythenumbers/) states only 26% of professional computing occupations in the 2021 U.S. workforce are held by women.

Codes of Conduct

**Codes Of Conduct (CoC)**

| This is a **living document** and will be **updated when needed** due to emerging scenarios not previously covered. |
| --- |

## **Our Pledge**

We as members, contributors, and leaders pledge to make participation in our community a harassment-free experience for everyone, regardless of:

* Age
* Body size
* Visible or invisible disability
* Ethnicity
* Sex characteristics
* Gender identity and expression
* Level of experience
* Education
* Socio-economic status
* Nationality
* Personal appearance
* Race
* Religion
* Sexual identity and orientation.

We pledge to act and interact in ways that contribute to a community which is:

* Open
* Welcoming
* Diverse
* Inclusive
* Healthy

## **Scope of Cultural Behaviour**

The Bootcamp is accessible to an international audience, and it's important to acknowledge that this bootcamp is based in Canada and will be scoped through the lens of Canadian Cultural Behaviour.

You can learn more through the [Government of Canada Pages on Culture](https://www.canada.ca/en/services/culture.html)

## **General Standards**

### **Encouraged Behaviour**

Examples of behavior that contributes to a positive environment for our community include:

* Demonstrating empathy and kindness toward other people
* Being respectful of differing opinions, viewpoints, and experiences
* Giving and gracefully accepting constructive feedback
* Accepting responsibility and apologizing to those affected by our mistakes, and learning from the experience
* Focusing on what is best not just for us as individuals, but for the overall community
* We prioritize **impact** of our actions over the **intent**

### **Unacceptable Behaviour**

Examples of unacceptable behavior include:

* The use of sexualized language or imagery, and sexual attention or advances of any kind
* Trolling, insulting or derogatory comments, and personal or political attacks
* Public or private harassment
* Publishing others' private information, such as a physical or email address, without their explicit permission
* Other conduct which could reasonably be considered inappropriate in a professional setting

## **Specific Standards**

### **S1 — Swearing**

Generally, we ask not to swear.

We may ask for you to **redact** or **soften** your language.

### **S2 — Expressions and Analogies**

Expressions or Analogies relating to Sex, Gender, Race, Religion may offend others.

### **S3 — Gender Pronouns**

If you are not certain of someone’s preferred pronouns, we ask that you use gender-neutral language. Some examples:

* Use “They” Instead Of “He” Or “She”
* Use “Partner,” “Sibling” And “Child”, instead of “girlfriend”,”wife”,”husband”,”boyfriend”, “son”, “daughter”, “brother”, “sister”
* Use “Latinx” Instead Of “Latino” Or “Latina”
* Use Gender-neutral Forms Of Occupations

If you have preferred pronouns please make them visible within your display name when possible.

We may ask or put forward suggestions to reword your posts to use gender-neutral language.

### **S4 — Disrespectful remarks**

* Spreading gossip
* criticizing, ridiculing, or dismissing others
* inappropriate sarcasm
* speaking in a condescending or belittling way
* discounting a member’s thoughts or feelings (“Oh, that’s silly/dumb/useless”)

We may ask you to redact or reword your expressions.

### **S5 — The Respect Policy**

Please do your best to save-face, give the benefit-of-the-doubt when expressing criticism or opinion about someone’s work or written opinion.

**What is Saving Face?**

**T**o avoid having other people lose respect for themselves. Something was done to try to lessen embarrassment or to make oneself look better in a situation where a person is embarrassed or made to look bad.

**What is providing the Benefit-of-the-doubt?**

A concession that a person or statement must be regarded as correct or justified if the contrary has not been proven.

### **S6 — The Apology Policy**

Please exercise the word sorry, and be sincerely apologetic to show consideration and sensitivity where one could offend or may have been then they have offended or upset.

**“**A sorry that follows a ‘but’ is not a sorry”

“A sorry you feel that way, is a non-apology”

## **Enforcement**

Organizers are responsible for clarifying and enforcing our standards of acceptable behavior and will take appropriate and fair corrective action in response to any behavior that they deem inappropriate, threatening offensive, or harmful.

Organizers have the right and responsibility to remove, edit, or reject messages, comments, commits, code, wiki edits, issues, and other contributions that are not aligned to this Code of Conduct, and will communicate reasons for moderation decisions when appropriate.

## **Enforcement Responsibilities**

#### **Where**

This Code of Conduct (CoC) strictly applies to our classroom settings:

* Zoom calls
* Meetup.com User Group
* Discord Group

This Code of Conduct (CoC) loosely applies to outside classroom settings when it relates to the bootcamp:

* Twitter
* LinkedIn

#### **Who**

This Code of Conduct applies to all community members participating in the bootcamp.

eg. Contributors, Guest Instructors, Organizers, Students, Sponsors

## **Enforcement Team**

Instances of abusive, harassing, or otherwise unacceptable behavior may be reported to the community leaders responsible for enforcement by sending a private message to any of the following moderators in:

* Andrew Brown

Additionally, as the enforcement team we will own the discomfort in prioritizing the safety of this bootcamp. We are obligated to respect the privacy and security of the reporter of any incident.

## **Enforcement Guidelines**

Community leaders will follow these Community Impact Guidelines in determining the consequences for any action they deem in violation of this Code of Conduct:

### **1. Correction**

**Community Impact**: Use of inappropriate language or other behavior deemed unprofessional or unwelcome in the community.

**Consequence**: A private, written warning from the enforcement team, providing clarity around the nature of the violation and an explanation of why the behavior was inappropriate. A public apology may be requested.

### **2. Warning**

**Community Impact**: A violation through a single incident or series of actions.

**Consequence**: A warning with consequences for continued behaviour. No interaction with the people involved, including unsolicited interaction with those enforcing the Code of Conduct, for a specified period of time. This includes avoiding interactions in community spaces as well as external channels like social media. Violating these terms may lead to Bootcamp Expulsion.

### **4. Bootcamp Expulsion**

**Community Impact**: Demonstrating a pattern of violation of community standards, including sustained inappropriate behavior, harassment of an individual, or aggression toward or disparagement of classes of individuals.

**Consequence**: A permanent ban from classroom environments, ineligibility for a certificate of completion or digital badges. Revocation of any recognition earned in the Bootcamp.

## **Attribution**

This Code of Conduct is adapted from the [Contributor Covenant](https://www.contributor-covenant.org/), version 2.0, available at<https://www.contributor-covenant.org/version/2/0/code_of_conduct.html>.

Community Impact Guidelines were inspired by [Mozilla's code of conduct enforcement ladder](https://github.com/mozilla/diversity).

For answers to common questions about this code of conduct, see the FAQ at<https://www.contributor-covenant.org/faq>. Translations are available at<https://www.contributor-covenant.org/translations>.

Homework Summary

Week 2 - Multi Modalities

This week is focused on Multi-modalities so we should attempt to work with various multiples outside of just LLMs.

**Language Listening App (Hard Requirement)**

* Pulling Transcriptions from Youtube
* Format the data to be inserted into a vector store
* We fetch similar questions based on inputted topic
* Generate a question in the frontend UI
* Generate audio so students listen.

**Kana Practice Apps (Hard Requirement)**

* Use a Vision Encoder Decoder for your target language. Eg. Toki Pona, Japanese, Chinese.
* Be able to input your image either webcam, upload or draw
* Decide on what you want to evaluate:
  + Sentence
  + Word
  + Character

**Video Translation Task (Optional)**

* Transcribe the audio and translate the transcript. Eg. OpenWhisper
* Generate a subtitle file from the transcript
  + How would align the timing of words?

**ASL Finger Spelling (Optional , Bonus Points)**

Try and find an existing Jupyter Notebook online that use OpenCV, MediaPipe that does ASL Fingerspelling. Demonstrate that you were able to get running by recording a video with your voice.

Week 3 - Containers and Agents

This week is focused on deepening our knowledge working with containerized GenAI workloads through OPEA and learning to build our own Agent that uses Agentic workflow.

**OPEA MegaService Continued**

You’re tasked with attempting to expand your knowledge and construct your own Mega-service.

For example:

Andrew returned back to the megaservice and fully troubleshooted why the handle\_request was not working my stepping through all the code and the codebase and developing debugging techniques and made the original mega-service example working.

Andrew then went on to reimplement the MegaService from scratch with new understanding of the codebase and tried to swap out Ollama with vLLM. However it turned out vLLM introduced more technical uncertainty because the target model was not loading or might not be compatible. Attempting to debug vLLM in isolation was challenging because the OPEA Configuration is intended for a specific Intel configuration and Andrew could not in designated time resolve local hardware configuration.  
  
Andrew instead decided to dive deep into the TTS service learning about the underlying model SpeakT5 and RVC-Boss/GPT-SoVITS, GPT-SoVITS is a voicecloning layer ontop of SpeakT5 which lack documentation, but Andrew was able to get a 10s voice cloning to work (with abysmal results). Andrew attempted 1m but it produced an empty voice clip and it would require stepping through the GPT-SoVITS which is not well documented, created by chinese research company with a very messy codebase. However this discovery leads Andrew to believe he might be able to produce a high quality synthetic voice if continued down this path.

Andrew did not complete integration into the megaservice.

**Agents and Agentic Workflow**

Implement an agent with Agentic workflow using an agent framework or from scratch

eg:

Andrew attempted to reimplement Goerge’s Vocab Song application in Windsurf and wrote a TechSpec to generate the app in a waterfall fashion. As per usual this approach lead significant troubleshooting since the app made several mistakes. Andrew could not get DuckDuckGo despite using the exact code that George used. This issue was due to Ratelimiting. Andrew implemented SerpAPI which had to be done manually because Claude Sonnet 3.5 kept producing incorrect results. Andrew implemented the agentic workflow without a framework and chose to use local models via LLM. However at a specific step the output kept returning blank. Andrew investigated and it appeared to be that the context window was set too small. After researching Andrew noticed that the code was hard coded for a very small context window of something like 2K and these models cloud handle 128K so he increased to the max size which resulted in there not being about Shared memory (generic memory). Andrew created a function to set the program to use a certain about of memory which would result in a token amount. Andrew had switch from Mistral 7B to Llama 3.2:3B because Mistral 7 was performing slow. Andrew did eventually realize he wasn’t utilizing GPUs and this was due to Ollama in WSL does not properly detect GPUs or iGPUs. Andrew researched and it appears that Ollama might have to be compiled to work on the WSL side.

While Andrew did not finish his implementation of his Agent, he is confident he could get it working using managed serverless services and the domain knowledge gained was working with local LLMS.

Projects

100 - Architecting GenAI

Architecting GenAI

**Difficulty:** Level 100

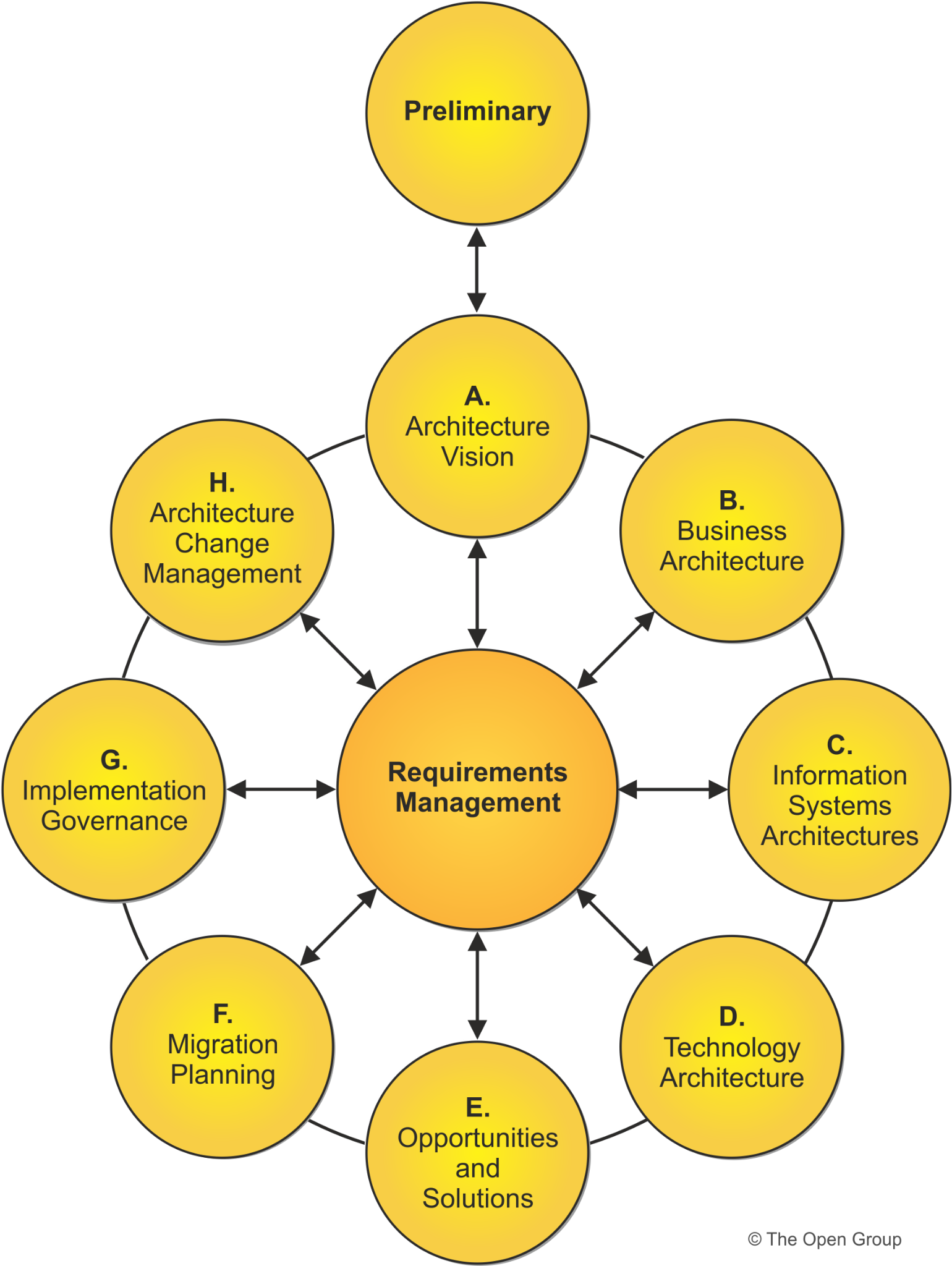
**Architecting Link:** [**Lucid Chart**](https://lucid.app/lucidchart/c7945e5c-a177-410c-8a24-2481a29563f1/edit?viewport_loc=-1795%2C-201%2C2217%2C1076%2CwfKOB.kyPhrS&invitationId=inv_aef7b30b-bf51-4cc6-a320-4e5f30574496)

**Business** **Goal:**

As a Solution Architect after consulting with real-world AI Engineers, you have been tasked to create architectural diagram(s) that serve as a teaching aid to help stakeholders understand their key components of GenAI workloads. The outcome is to help let stakeholders visualize possible technical paths, technical uncertainty when adopting GenAI.

We are guiding key stakeholders through the technical landscape without directly prescribing solutions, while fostering informed discussions about infrastructure choices, integration patterns, and system dependencies across the organization.

We can use all levels of technical diagramming to achieve our goal.



* <https://www.opengroup.org/togaf>
* <https://c4model.com/>
* <https://medium.com/@nolomokgosi/conceptual-logical-and-physical-design-c24100846931>

**Technical Considerations**

Let’s assume we are following the three levels of diagramming:

* **Conceptual** — a high level diagram that is used to communicate to key stakeholders the business solution we are implementing
* **Logical** — a mid level diagram that describes the key technical components but not requiring detailed parameters so we can quickly rearchitect and communicate to our technical team the current workload
* **Physical** — a low level diagram that details all possible parameters and connections used by engineers/developers to accurately implement a solution (e.g. ARNs for resources, IP addresses, etc)

**Architectural/Design Considerations**

* **Requirements, Risks, Assumptions, & Constraints:**
  + **Requirements** are the specific needs or capabilities that the architecture must meet or support.
    - Categories:
      * Business Requirements: Business goals and objectives
      * Functional Requirements: Specific capabilities the system must have
      * Non-functional Requirements: Performance, scalability, security & useability
      * Tooling: GenAI vs ML
  + **Risks** are potential events or conditions that could negatively affect the success of the architecture or its implementation. Identifying and mitigating risks ensures smoother project delivery.
  + **Assumptions** are things considered to be true without proof at the time of planning and development. These are necessary for decision-making but can introduce risks if proven false.
  + **Constraints** are limitations or restrictions that the architecture must operate within. These are non-negotiable and must be adhered to during design and implementation.
* **Data Strategy**
  + Develop a comprehensive data strategy that addresses:
    - Data collection and preparation
    - Data quality and diversity
    - Privacy and security concerns
    - Integration with existing data systems
* **Model Selection and Development**
  + Choose appropriate models based on your use cases. Consider factors such as:
    - Self Hosted vs SaaS
    - Open weight vs Open Source
    - Input-Output: text-to-text?
    - Number of models needed
    - Number of calls/model
    - Size
    - Evaluation
    - Context window: input, output
    - Fine-tuning requirements
    - Model performance and efficiency
* **Infrastructure Design**
  + Design a scalable and flexible infrastructure that can support GenAI workloads:
    - Leverage cloud platforms for scalability and access to specialized hardware
    - Implement a modular architecture to allow for easy updates and replacements of components
    - Consider hybrid or multi-cloud approaches for optimal performance and cost-efficiency
* **Integration and Deployment**
  + Plan for seamless integration with existing systems and workflows:
    - Develop APIs and interfaces for easy access to GenAI capabilities
    - Implement CI/CD pipelines for model deployment and updates
    - Ensure compatibility with legacy systems
* **Monitoring and Optimization**
  + Establish robust monitoring and optimization processes:
    - Implement logging and telemetry for model performance
    - Set up feedback loops for continuous improvement
    - Develop KPIs to measure the business impact of GenAI solutions
    - Depending on the location, set up billing alerts to monitoring usage over time
* **Governance and Security**
  + Implement strong governance and security measures:
    - Develop policies for responsible AI use
    - Implement access controls and data protection measures
    - Ensure compliance with relevant regulations and industry standards
* **Scalability and Future-Proofing**
  + Design the architecture with scalability and future advancements in mind:
    - Use containerization and microservices for flexibility
    - Implement version control for models and data
    - Plan for potential increases in computational requirements

**Business Considerations**

* **Use Cases:**
  + Start by clearly defining the specific use cases for GenAI within your organization:
  + Identify the business problems you're trying to solve and the desired outcomes
* **Complexity:** As a stakeholder how do I understand the level of complexity integrating GenAI (specifically) LLMs into our workload?
  + eg. How many moving parts will it add to our workload?
  + eg. Is this set and forget, or do we need people to monitor and maintain these components regularly?
* **Key levers of cost:** As a stakeholder how can I understand the key costs to running GenAI at a glance?
  + eg. Size of servers
  + eg. Size of models
* **Lock-in:** What is a technical path we should consider so we are not locked-in to a vendor solution.
  + eg. How do we avoid rug pulls? (The cost going up being locked into a solution)
  + Eg. How do we position our technical stack so we can transition to better models or solutions?
* What essential components should be conveyed as necessary when deploying a GenAI workload for production
  + Guardrails
  + Evaluations
  + Sandboxing via Containers

**LLM specific thoughts:**

1- Choosing a Model:

* input-output modalities
* open source vs proprietary
* SaaS or self hosted
* context window
* cost

2- Enhance Context:

* Some options: Direct context injection or setting up a knowledge base?
* Some criteria to evaluate:
  + Size of input (one document or chunks of several docs)
  + Model context window
  + One time use or repeated use of information
  + Prototyping or scalable system?

3- Guardrails:

* Input guardrails
* Output guardrails
* Implementation

4- Abstract Model access

* Models & patterns to support
* Modalities to support

5- Caches

* Caching Strategy
* Cache levels
* Invalidation rules
* Storage options
* Hit rate optimization

6- Agents

* Actions to be executed
* System integration

100 - JP Sentence Constructor

Japanese Sentence Constructor

**Difficulty:** Level 100

**Business** **Goal:**

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

Will AI-Powered Assistants replace real teachers?

**Technical Uncertainty**

1. How well can an AI-Powered Assistant perform a very broad task?
2. Would a very broad task be better performed by dividing it into subtasks with specialized agents?
3. Does using an AI-Powered Assistant make for a good place to rapidly prototype agents?
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?
5. How much do we have to rework our prompt documents from one AI-Powered Assistant to another?
6. What prompting techniques can we naturally discover working in the confines of an AI-Powered Assistant?
7. Are there any interesting innovations unique to specific AI-Powered Assistants for our business goal?
8. What were we able to achieve based on our AI-Powered Assistant choice and our hardware, or budget limitations?

**Technical Restrictions**

* An AI-Powered Assistant of the developer’s choice must be used eg:
  + Meta AI https://www.meta.ai/
  + ChatGPT https://openai.com/index/chatgpt/
  + Anthropic Claude https://www.anthropic.com/claude
  + Mistral AI https://mistral.ai/
  + \*Ollama + Open WebUI https://openwebui.com/
  + \*LibreChat https://www.librechat.ai/
  + Leon <https://github.com/leon-ai/leon>

| Meta AI | https://www.meta.ai/ | FREE (cloud) |
| --- | --- | --- |
| Mistral AI | https://mistral.ai/ | FREE (cloud) |
| Ollama + Open WebUI | <https://openwebui.com/>  <https://ollama.com/> | FREE (Local) |
| Anthropic Claude |  | FREE but limited  Paid ~30 USD |
| ChatGPT |  | FREE but limited  Paid 20 USD |
|  |  |  |

200 - Backend Lang Portal

Backend — Lang Portal

**Difficulty:** Level 200

**Business** **Goal:**

A language learning school wants to build a prototype of learning portal which will act as three things:

* Inventory of possible vocabulary that can be learned
* Act as a Learning record store (LRS), providing correct and wrong score on practice vocabulary
* A unified launchpad to launch different learning apps

You have been tasked with creating the backend API of the application.

**Technical Restrictions:**

* Use SQLite3 as the database
* You can use any language or framework
* Does not require authentication/authorization, assume there is a single user

Leverage AI-coding assistants to write your backend code:

* Cursor
* Windsurf Codeium
* Github Copilot
* Amazon Q Developer
* Google Code Assist

Technical Specification

**Routes**

* **GET** /words - Get paginated list of words with review statistics
* **GET** /groups - Get paginated list of word groups with word counts
* **GET** /groups/:id - Get words from a specific group (This is intended to be used by target apps)
* **POST** /study\_sessions - Create a new study session for a group
* **POST** /study\_sessions/:id/review - Log a review attempt for a word during a study session

**GET /words**

* page: Page number (default: 1)
* sort\_by: Sort field ('kanji', 'romaji', 'english', 'correct\_count', 'wrong\_count') (default: 'kanji')
* order: Sort order ('asc' or 'desc') (default: 'asc')

**GET /groups/:id**

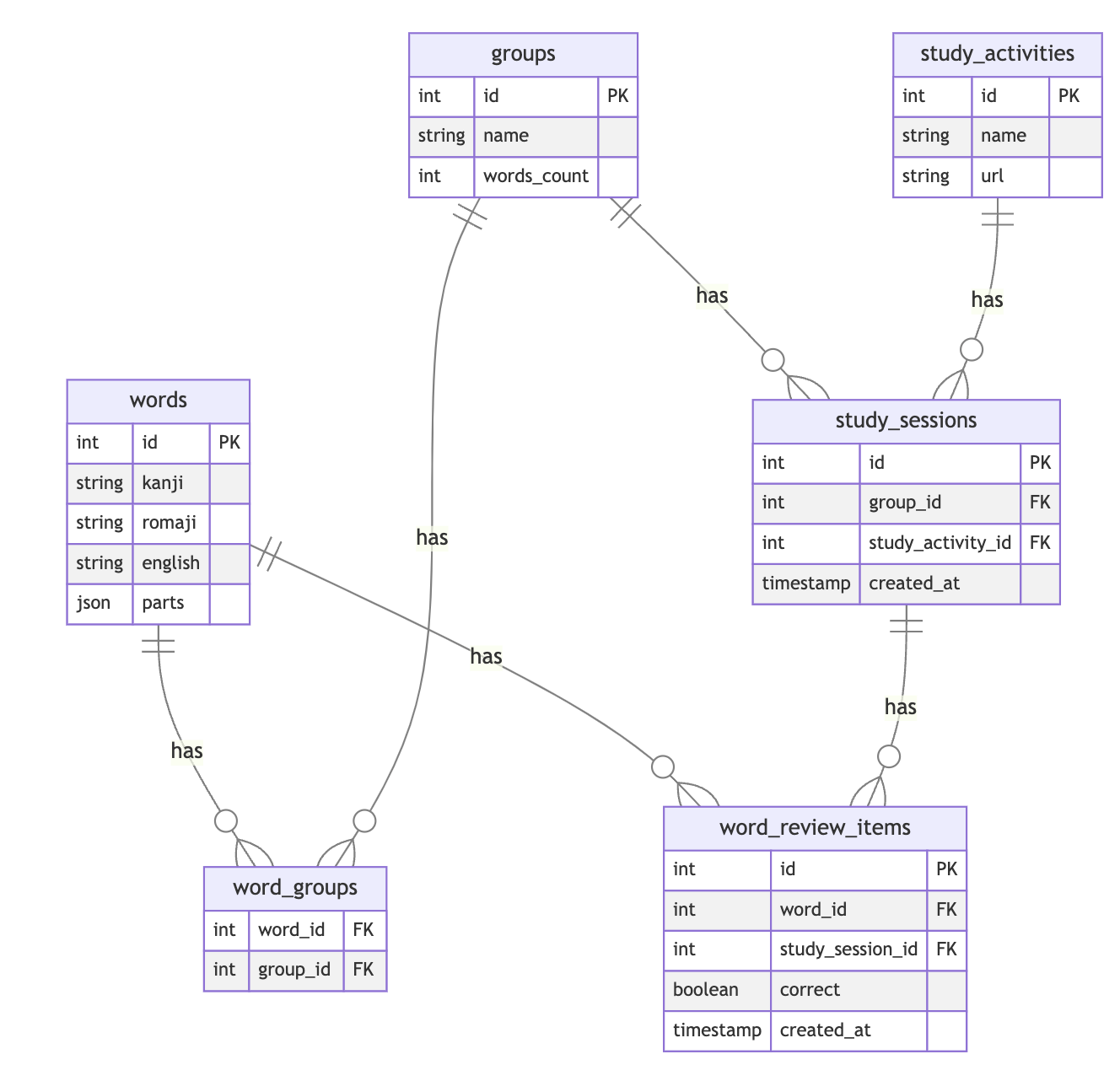
* page: Page number (default: 1)
* sort\_by: Sort field ('name', 'words\_count') (default: 'name')
* order: Sort order ('asc' or 'desc') (default: 'asc')

**POST /study\_sessions**

* group\_id: ID of the group to study (required)
* study\_activity\_id: ID of the study activity (required)

**POST /study\_sessions/:id/review**

**Database Schema**

****

**words —** Stores individual Japanese vocabulary words.

- `id` (Primary Key): Unique identifier for each word

- `kanji` (String, Required): The word written in Japanese kanji

- `romaji` (String, Required): Romanized version of the word

- `english` (String, Required): English translation of the word

- `parts` (JSON, Required): Word components stored in JSON format

**groups —** Manages collections of words.

- `id` (Primary Key): Unique identifier for each group

- `name` (String, Required): Name of the group

- `words\_count` (Integer, Default: 0): Counter cache for the number of words in the group

**word\_groups —** join-table enabling many-to-many relationship between words and groups.

- `word\_id` (Foreign Key): References words.id

- `group\_id` (Foreign Key): References groups.id

**study\_activities —** Defines different types of study activities available.

- `id` (Primary Key): Unique identifier for each activity

- `name` (String, Required): Name of the activity (e.g., "Flashcards", "Quiz")

- `url` (String, Required): The full URL of the study activity

**study\_sessions** — Records individual study sessions.

- `id` (Primary Key): Unique identifier for each session

- `group\_id` (Foreign Key): References groups.id

- `study\_activity\_id` (Foreign Key): References study\_activities.id

- `created\_at` (Timestamp, Default: Current Time): When the session was created

**word\_review\_items** — Tracks individual word reviews within study sessions.

- `id` (Primary Key): Unique identifier for each review

- `word\_id` (Foreign Key): References words.id

- `study\_session\_id` (Foreign Key): References study\_sessions.id

- `correct` (Boolean, Required): Whether the answer was correct

- `created\_at` (Timestamp, Default: Current Time): When the review occurred

**Relationships**

* word belongs to groups through word\_groups
* group belongs to words through word\_groups
* session belongs to a group
* session belongs to a study\_activity
* session has many word\_review\_items
* word\_review\_item belongs to a study\_session
* word\_review\_item belongs to a word

**Design Notes**

* All tables use auto-incrementing primary keys
* Timestamps are automatically set on creation where applicable
* Foreign key constraints maintain referential integrity
* JSON storage for word parts allows flexible component storage
* Counter cache on groups.words\_count optimizes word counting queries

Home Challenge

* Level 1: reimpement the missing API endpoints
* Level 5: rebuild the entire thing from scratch with whatever you want.

200 — Frontend Lang Portal

Frontend — Lang Portal

**Difficulty:** Level 200

**Business** **Goal:**

A language learning school wants to build a prototype of learning portal which will act as three things:

* Inventory of possible vocabulary that can be learned
* Act as a record store, providing correct and wrong score on practice vocabulary
* A unified launchpad to launch different learning apps

You have been tasked with creating the frontend API of the application.

The fractional CTO has made strong recommendation that you settle on a frontend stack that is being commonly adopted and optimized for AI prototyping services.

The frontend application should powered by your backend API.

**Technical Restrictions:**

The technical stack should be the following:

* Typescript (statically typed javascript)
* Tailwind CSS (css framework)
* Vite.js (frontend tool)
* ShadCN (UI components)

Leverage an AI prototyping service to write your frontend code:

* Lovable.dev
* Bolt.new
* v0.dev

Leverage AI-coding assistants as a secondary AI service to write your frontend code:

* Cursor
* Windsurf Codeium
* Github Copilot
* Amazon Q Developer
* Google Code Assist

200 — Vocab Importer

Vocab Importer

**Difficulty:** Level 200

**Business** **Goal:**

The prototype of the language learning app is built, but we need to quickly populate the application with word and word groups so students can begin testing the system.

There is currently no interface for manually adding words or words groups and the process would be too tedious.

You have been asked to:

* create an internal facing tool to generate vocab
* Be able to export the generated vocab to json for later import
* Be able to import to import json files

**Technical Restrictions**

Since this is an internal facing tool the fractional CTO wants you to use an app prototyping framework of your choice:

* Gradio
* Streamlit
* FastHTML

You need to use an LLM in order to generate the target words and word groups.

You can use either an:

* Managed/Serverless LLM API
* Local LLM serving the model via OPEA

300 - Listening Learning App

Listening Learning App

**Difficulty:** Level 300

**Business** **Goal:**

You are an Applied AI Engineer and you have been tasked to build a Language Listening Comprehension App. There are practice listening comprehension examples for language learning tests on youtube.

Pull the youtube content, and use that to generate out similar style listening comprehension.

**Technical Uncertainty:**

* Don’t know Japanese!
* Accessing or storing documents as vector store with Sqlite3
* TSS might not exist for my target language OR might not be good enough.
* ASR might not exist for my target language OR might not be good enough.
* Can you pull transcripts for the target videos?

**Technical Requirements:**

* (Optional) Speech to Text, (ASR) Transcribe. eg Amazon Transcribe. OpenWhisper
* Youtube Transcript API (Download Transcript from Youtube)
* LLM + Tool Use “Agent”
* Sqlite3 - Knowledge Base
* Text to Speech (TTS) eg. Amazon Polly
* AI Coding Assistant eg. Amazon Developer Q, Windsurf, Cursor, Github Copilot
* Frontend eg. Streamlit.
* Guardrails

200 - OPEA Comps

**OPEA Comps**

**Difficulty:** Level 200

**Business** **Goal:**

The company wants you to explore the effort it would take to run the AI workloads completely on servers that will live in-house. The fractional CTO, suggests that its best practice to run workloads in containers or kubenetes. You as the AI Engineer have been tasked to determine how to learn to work with the building blocks to constructor your own GenAI workloads running on containers.

**Technical Uncertainty**

* Using OPEA does it serve the model via a LLM server?
* How do we orchestrate two services together?
* What is the quality of build across the various OPEA Comps?

**Technical Restrictions**

* [GenAIComps (GitHub Repo)](https://github.com/opea-project/GenAIComps)
* [OPEA Comps Project](https://opea-project.github.io/latest/GenAIComps/README.html)
* Docker Containers

**Homework Challenges**

* Orchestrate multiple services eg. 2 or 3 together
* Or Try and get a different comp working that Andrew did use not use.

**Homework Bonuses**

* Make a tutorial or technical doc that is public on LinkedIn, Medium, Hashnode, Your Blog
  + Tag Andrew or show off the work in the Discord show-and-tell.

200 — Test Coverage

Quality Assurance and Test Coverage

**Difficulty:** Level 200

**Business** **Goal:**

Now that the prototype web-application is working, the fractional CTO wants to provide assurance to key stakeholders that the application is working as expected.

You have been tasked to do two things:

* Use an AI coding assistant or LLMs to audit and improve, refactor your codebase.
* Implement Unit Tests and try to aim for at least 70% coverage

Please write up a summary of your findings for the fractional CTO to review.

**Technical Considerations**

Use AI coding assistants or specialized AI code coverage tools:

* Qodo coverage — open-source tools can be used to rapidly write Unit Tests
* Windsurf
* Cursor
* Amazon Developer Q
* Github Copilot

300 - Writing Practice

Writing Practice

**Difficulty:** Level 200

**Business** **Goal:**

Students have asked if there could be a learning exercise to practice writing language sentences.

You have been tasked to build a prototyping application which will take a word group, and generate very simple sentences in english, and you must write them in the target lanagueg eg. Japanese.

**Technical Requirements:**

* Streamlit
* MangaOCR (Japanese) or for another language use Managed LLM that has Vision eg. GPT4o
* Be able to upload an image

400 - Multimedia Agent

**Multimedia Agent Workflow**

[WIP - Might be scrapped]

**Difficulty:** Level 400

Types of Media:

* Subtitles files
* Youtube video

Tool Use

<https://github.com/yt-dlp/yt-dlp>

* Yt-dlp is a generic API to youtube to download videos, convert video to just audio, and possible download transcripts/subtitles
* yt-dlp: single video to audio files
* yt-dlp: playlist to audio files
* Yt-dlp: download subtitles/transcript to text
* Whisper: transcribe japanese audio to japanese text
* Normalize Writing System
  + Take the japanese text and make it use the correct natural writing language
* OCR (with OpenAI) a series of pages for a pdf to raw text
* MapReduce - distill the body of text into the fewest of vocabulary, grammar rules
* Convert the body of text into json structure for import into the main application.

400 - Finger Spelling Agent

**Finger Spelling Agent**

**Difficulty:** Level 400

**Business** **Goal:**

The language learning school wants to expand their service offering by providing beginner level learning tools for American Sign Language (ASL) and have asked you to implement a study activity program that will allow students to use their web-cam and practice fingerspelling the english alphabet in ASL.

**Sign Language Considerations:**

ASL is one of many sign languages.

* ASL = American Sign Language
* BASL = Black American Sign Language
  + Dialect of ASL and often uses two hands to sign
* JSL = Japanese Sign Language
* BSL = British Sign Language

Different sign languages use different signs, and have different language features.

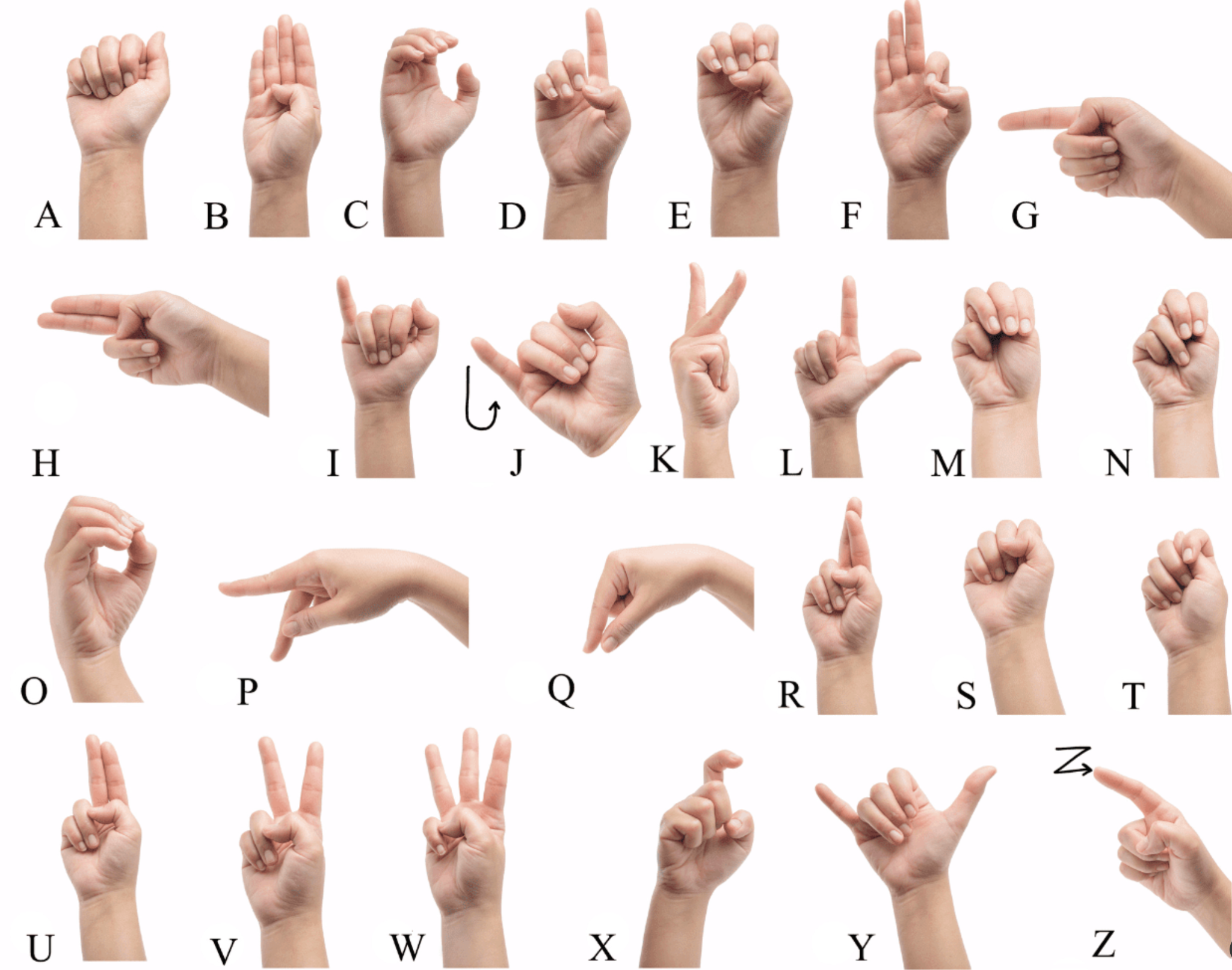
ASL includes more than just hand signs, but one must factor in facial expressions, body movements, posture, mouthing the words, space and directionality.

ASL is its own distinct language with its own unique grammar and syntax

* it's not a word for word signed version of English.

When building accessibility applications for sign language you need to consider all the above and work with the deaf community.

For ASL the english alphabet can be represented using a single handle with a single sign.  
While these images appear static, consider that hand motion is part of identifying the sign.



**Technical Uncertainty:**

* What training data can we use to identify fingerspelling signs?
* How accurate will the singing be if it captures a static image vs video?
  + How would video be represented? 24 frames of videos or checkpoint video frames
* What possible ML Models or architectures exist that have been used for identifying ASL signs?
* What vision strategy should we use to detect signs?
  + Are we detecting hand gestures by drawing a skeleton shape with nodes and lines?
  + Are we detecting the image as a whole against other collection of images?
  + Are we detecting based on motion and direction?
* What is the amount of resources required to run this ML task?
  + Is this for low-inference that can be run on a modern AI PC or mobile phone?
  + Could the vision model utilize NPUs?

**Technical Considerations and Resources**

* [OpenCV](https://opencv.org/) - Computer Vision Library
* [MediaPipe](https://github.com/google-ai-edge/mediapipe) - Live-streaming video
* [ASL Alphabet Datset Kaggle](https://www.kaggle.com/datasets/grassknoted/asl-alphabet)
* [RavenOnur/Sign-Language](https://huggingface.co/RavenOnur/Sign-Language) - hugging face and codelab example of detecting signs
* [aqua1907Gesture-Recognition](https://github.com/aqua1907/Gesture-Recognition) - Gesture Recognition

500 - Text Adventure MUD

Text Adventure MUD

**Difficulty:** Level 500

**Business Goal:**

You are an Applied AI Engineer and you have tasked to create a language immersion game based on the old-style texture MUDS eg. Zork, Shadowgate.

You will load in target vocabulary and the game will utilize that exact vocabulary.

**Feature Limitations:**

To keep the game simple we’ll limit to the following verbs:

**Fixed Actions:**

* Look (examine surroundings or objects)
* Move (or go in a direction)
  + North, Up, Left, Right
* Take (pick up items)
* Drop (discard items)
* Talk/Say (communicate with NPCs)
* Use (interact with items)
* Give (transfer items to others)
* Open (doors, chests, etc.)
* Close (doors, containers)
* Eat (consume food items)
* Inventory (check carried items)
* Drink (consume liquids)
* Help (view commands/instructions)

**Desktop Adventure Text**

One sentence. With exactly one vocabulary, Japanese word.

Groups

America Latina Tech

**WIP: This is incomplete**

**Coordinador(a) principal:** [Augusto Valdivia](https://www.linkedin.com/in/augustovaldivia/)

**Viaje de Aprendizaje en América Latina**

Estamos buscando armar una pista de aprendizaje tecnológico con personas tecnológicas de América Latina.

Necesitamos entre 4 y 6 instructores de tecnología.

Lo que queremos ver:

* Contenido en español
* Tomar el contenido de la pista principal y hacerlo propio
* Crear contenido nuevo que esté en línea con los detalles del proyecto
* Consejos específicos para la comunidad, por ejemplo, cómo conseguir empleo en empresas remotas de EE. UU. y Canadá desde América Latina

Estructura Propuesta:

* Los videos son pregrabados
* La duración de los videos es de 30 minutos a 2 horas
* Fiesta de visionado de videos todos los sábados (organizador e instructores invitados)
* Preguntas y Respuestas - 30 minutos después de la fiesta de visionado, las personas pueden hacer preguntas en una sala de Discord.

Mensaje de Andrew sobre los detalles del proyecto: https://youtu.be/Tae4osFwWXQ

Escenario de Negocio

Te han contratado como ingeniero de IA para una escuela de aprendizaje del idioma japonés para ampliar la oferta de idiomas y también aumentar la experiencia de aprendizaje de los estudiantes entre clases dirigidas por un instructor.

La escuela cuenta con un portal de aprendizaje y un almacén de registros de aprendizaje.

Se le ha encomendado la tarea de:

crear una colección de aplicaciones de aprendizaje utilizando varios casos de uso diferentes de IA

Mantener la experiencia de aprendizaje en el portal de aprendizaje mediante herramientas de desarrollo de IA

Ampliar la plataforma para admitir varios idiomas diferentes

Aplicaciones de aprendizaje

Consideraciones: Esta es una lista de deseos de proyectos potenciales en torno al caso de uso comercial y es posible que no construyamos todas estas ideas.

Generador de novelas visuales de la vida diaria

Crea una aplicación de aprendizaje que abarque una ciudad y permita al jugador visitar lugares clave y tener conversaciones de rutina diaria con variación.

- Debe generar caracteres coherentes

- Debe mantener el historial de chat de varios personajes

Aventura de texto en japonés

Cree una aplicación de aprendizaje de aventuras de texto que introduzca lentamente el vocabulario japonés y tenga todas las acciones principales necesarias para escribir japonés.

Constructor de oraciones japonesas

Cree una aplicación de aprendizaje que haga que el usuario ingrese una frase en inglés, y la aplicación lo ayudará a traducir al japonés sin proporcionarle directamente la respuesta.

Señas para hablar

Cree una aplicación de aprendizaje que permita a los usuarios practicar la ortografía con los dedos en ASL a través de una cámara web.

- La aplicación presentará vocabulario de una sola letra y el estudiante intentará firmar la letra.

Subtítulos al vocabulario

Cree una utilidad de aprendizaje que tome un archivo de subtítulos de una película y extraiga todo el vocabulario.

- Debe usar LLM para extraer el vocabulario

- Debe usar trabajos por lotes sin conexión para proporcionar el costo más bajo

- Debe preparar los datos en la salida estructurada json

- Debe evaluar el vocabulario resultante para que sea correcto

Hablar para aprender

Cree una aplicación de aprendizaje que permita a los usuarios practicar el habla en un idioma de destino.

- La aplicación presentará vocabulario de una sola palabra y el estudiante intentará decir la palabra.

- Evalúe las posibles soluciones de reconocimiento automático de voz (ASR)

- La inferencia de voz a texto para MVP debe ser inferior a 1s

- Determine el costo más bajo para ejecutar ASR a escala con 10 000 usuarios simultáneos

Noticias Recientes Ejercicios de Comprensión Lectora

Crea una aplicación de aprendizaje que se base en las últimas noticias japonesas y cree un ejercicio de lectura.

- Debe resaltar las palabras que son su vocabulario conocido

- En el caso de las palabras desconocidas, deberías ser capaz de practicarlas unas cuantas veces en contexto y añadirlas a tu vocabulario.

Guía para Instructores Invitados

Guía para Instructores Invitados

Mensaje de Andrew para los Instructores Invitados: https://youtu.be/AtEhUXVA2RI

Quiero ser un instructor invitado, ¿cómo puedo postularme?

Contacta a Andrew de las siguientes maneras:

Envíale un mensaje directo a Andrew en LinkedIn https://www.linkedin.com/in/andrew-wc-brown/

Envíale un mensaje directo a Andrew en Twitter https://x.com/andrewbrown

Escribe a Andrew al correo andrew@exampro.co

¿Cuál es el compromiso de tiempo?

Se basa en tu nivel de interés.

Algunos instructores invitados quieren liderar la instrucción.

Algunos instructores invitados quieren apoyar la instrucción.

Algunos instructores invitados solo quieren hacer una charla informal.

Algunos instructores invitados quieren reunirse semanalmente y ajustar el contenido.

Algunos instructores invitados quieren aparecer, presionar grabar y hacer contenido en una sola toma.

Andrew encontrará cómo encajas en el currículo.

No soy un "experto en IA", ¿estás seguro de que soy la persona adecuada?

Estamos enseñando todos los niveles y queremos tener instructores de todos los niveles.

Hay algunos instructores que pueden hablar más sobre el caso de uso empresarial.

Hay algunos instructores que son expertos en una tecnología adyacente.

Hay algunos instructores que, sin conocimiento experto, pueden actuar como la voz del estudiante.

Hay algunos instructores que aportan buenas vibras.

No vamos a engañar a los asistentes ni a embellecer el conocimiento o conjunto de habilidades de un instructor.

Está bien, estoy aquí, ¿en qué estamos trabajando?

Tengo una serie de posibles proyectos de "aplicaciones de aprendizaje" en torno a nuestro caso de uso empresarial. Detalles del Proyecto

Puedes:

Proponer tu propia idea de aplicación.

Ayudar a trabajar en una aplicación existente.

También considera la Hoja de Ruta de GenAI Preq como posibles ideas de alguna área que se puede enseñar.

Pero necesitamos trabajar hacia atrás y adaptarlo a nuestro caso de uso empresarial.

Supongamos que quieres enseñar "ajuste fino de lora" utilizando un LLM, se sugirió la siguiente idea:

Ajustar modelos para entender y generar dialectos regionales o japonés coloquial, ayudando a los aprendices interesados en regiones específicas.

Ya he construido algo. ¿Puedo traer ese contenido?

Nuestro currículo se basa en proyectos en torno a un caso de uso empresarial muy específico, por lo que todo el contenido debe ser reestructurado para ajustarse a ese caso de uso empresarial.

Por favor, consulta los Detalles del Proyecto para entender el caso de uso empresarial.

¿Cómo coordinamos la creación de contenido?

Coordinarás directamente de manera informal con Andrew a través de tu medio de comunicación preferido.

Trabajo en [Esta] Empresa, ¿hay algo que deba considerar?

Este es un evento comunitario, así que recuerda:

No ventas agresivas.

No demostraciones de productos.

No ocultar o minimizar deficiencias del producto.

¿Puedo promocionar mi propia marca y producto?

Sí, si tienes algo que deseas promocionar, lo listaríamos bajo Patrocinador Comunitario en el sitio web de marketing.

¿Este evento es en vivo o pregrabado?

Cada semana tenemos una transmisión en vivo de 2 horas seguida de una serie de videos más pequeños.

La mayoría de los instructores van a grabar videos previamente antes de la fecha de inicio del bootcamp.

En su mayoría, queremos que las personas estén en "cámara".

¿Puedo grabar solo?

Todo el contenido de video debe estar acompañado por Andrew u otro organizador clave.

¿Para cuándo debemos tener este contenido listo?

El contenido debe estar preparado y aprobado lo antes posible.

La mayoría del contenido necesita ser grabado en enero.

¿Cómo estamos grabando / transmitiendo videos?

Usaremos StreamYard.

Programarás un tiempo con Andrew, recibirás un enlace y grabaremos.

¿Puedo ser un instructor invitado en vivo?

Solo hay seis aulas en vivo que duran 2 horas, por lo que hay asientos muy limitados para estos eventos en el aula.

¿Puedo empezar a decirle a la gente que soy un instructor invitado?

Sí, eres libre de compartir en redes sociales cada vez que seas un instructor invitado.

Tendremos una tarjeta social para instructores invitados que puedes usar para compartir oficialmente.

Eres libre de listarte como instructor invitado en tu perfil de LinkedIn bajo voluntariado.

¿Qué pasa si en el último minuto no puedo grabar?

La vida sucede, solo haz tu mejor esfuerzo para darnos aviso.

100 - Español Creador Horaciones

Constructor de Oraciones en Ingles

Dificultad: Nivel 100

**Objetivo Empresarial:**

Un agente de chat que actúa como asistente de enseñanza para guiar a los estudiantes en la traducción de una oración en Español a Ingles. El asistente de enseñanza no está allí para proporcionar la respuesta directa, solo orientación.

¿Reemplazarán los Asistentes Impulsados por IA a los verdaderos maestros?

**Incertidumbre Técnica**

¿Qué tan bien puede desempeñarse un Asistente Impulsado por IA en una tarea muy amplia?

¿Sería mejor realizar una tarea muy amplia dividiéndola en subtareas con agentes especializados?

¿Hacer uso de un Asistente Impulsado por IA es un buen lugar para prototipar rápidamente agentes?

¿Cómo podríamos tomar el agente que construimos en un Asistente Impulsado por IA y reimplementarlo en una pila que permita la integración directa en nuestra plataforma?

¿Cuánto tenemos que rehacer nuestros documentos de indicaciones de un Asistente Impulsado por IA a otro?

¿Qué técnicas de indicaciones podemos descubrir naturalmente trabajando dentro de los límites de un Asistente Impulsado por IA?

¿Hay alguna innovación interesante única de ciertos Asistentes Impulsados por IA para nuestro objetivo empresarial?

¿Qué pudimos lograr en base a nuestra elección de Asistente Impulsado por IA y nuestras limitaciones de hardware o presupuesto?

**Restricciones Técnicas**

Se debe utilizar un Asistente Impulsado por IA de la elección del desarrollador, por ejemplo:

* Meta AI https://www.meta.ai/
* ChatGPT https://openai.com/index/chatgpt/
* Anthropic Claude https://www.anthropic.com/claude
* Mistral AI https://mistral.ai/
* \*Ollama + Open WebUI https://openwebui.com/
* \*LibreChat https://www.librechat.ai/
* Leon <https://github.com/leon-ai/leon>

| Meta AI | https://www.meta.ai/ | Gratis (cloud) |
| --- | --- | --- |
| Mistral AI | https://mistral.ai/ | Gratis (cloud) |
| Ollama + Open WebUI | <https://openwebui.com/>  <https://ollama.com/> | Gratis (Local) |
| Anthropic Claude |  | Gratis/Limitado  Paid ~30 USD |
| ChatGPT |  | Gratis/Limitado  Paid 20 USD |
|  |  |  |

Organizer Resources

Guest Instructor Guide

# Guest Instructors Guide

Andrew’s Message to Guest Instructors: <https://youtu.be/AtEhUXVA2RI>

**I want to be a guest instructor, how do I apply?**

Get ahold of Andrew in one of the following ways:

* DM Andrew on LinkedIn <https://www.linkedin.com/in/andrew-wc-brown/>
* DM Andrew on Twitter <https://x.com/andrewbrown>
* Email Andrew at [andrew@exampro.co](mailto:andrew@exampro.co)

**What is the time commitment?**

It’s based on your level of interest..

* Some guest instructors want to lead instruction
* Some guest instructors want to support instruction
* Some guest instructors want to just do a fireside chat
* Some guest instructors want to meet weekly and fine tune content
* Some guest instructors want to show up, hit record and single take content

Andrew will find you fit into the curriculum.

**I’m not an “AI Expert”, are you sure I’m the right person?**

We are teaching all levels, and we want to have all levels of instructors.

* There are some instructors that can speak more to the business-use-case
* There are some instructors that are experts in an adjacent technology
* There are some instructors who without expert knowledge can act as the student voice
* There are some instructors who bring good vibes

We aren’t going to mislead attendees and embellish an instructor's domain knowledge or skill set.

**Okay, I’m here, what are we working on?**

I have a series of possible projects “learning apps” around our business use-case Project Details

You can:

* Come up with your own app idea
* Help work an existing app

Also consider the [Preq GenAI Roadmap](https://lucid.app/lucidchart/956919b6-2736-4b0a-897b-fe80884b4698/edit?page=0_0&invitationId=inv_ba782543-2a39-427a-bb5f-bbd579da59bf#) as possible ideas of some area that can be teach.

But we need to work our way backwards and fit it to our business use-case.  
  
Let’s say you want to teach “lora fine-tuning” using an LLM it suggested the following idea:

* Fine-tune models to understand and generate regional dialects or colloquial Japanese, aiding learners interested in specific regions.

**I’ve already built something. Can I bring that content?**

Our curriculum is project-based around a very specific business use-case and so all content must be reworked to fit that business use-case.

Please see Project Details to understand the business use-case.

**How do we coordinate content creation?**

You’ll directly coordinate informally with Andrew through your preferred means of communication.

**I work [This] Company, anything I should consider?**

This is a community event and so remember:

* No hard sells
* No product demos
* No hiding or hand-waving product deficiencies

**Can I promote my own brand and product?**Yes, if you have something you want to promote we would list it under Community Sponsor on the marketing website.

**Is this thing live or pre-recorded?**

Every week we have a weekly live-stream for 2 hours followed by a series of smaller videos.

Most instructors are going to be making pre-recorded videos ahead of the bootcamp start date.

For the most part we want people on “webcam”.

**Can I record alone?**

All video content must be accompanied by Andrew or another key organizer.

**When do we need to have this content done by?**

Content needs to be prepped and approved as soon as possible.

Most content needs to be recorded in January.

**How are we recording / streaming videos?**

We’ll be using StreamYard.

You’ll schedule a time with Andrew, you’ll get a link and we’ll record.

**Can I be a live-guest instructor?**

There are only six live classrooms that last for 2 hours, so there is very limited seating for these classroom events.

**Can I start telling people I’m a guest instructor?**

Yes, you’re free to share on socials anytime you are a guest instructor.

We will have a guest instructor social card you can use to officially share.

You’re free to list yourself as a guest instructor in your LinkedIn profile under volunteering.

**What happens if at the last minute I’m unable to record?**

Life happens, just do your best to provide us notice.

Sponsorship Information

Key Points

* **Event Duration:** 6 weeks to 3 months.
* **Interactive Sessions:** Weekly live classes, after-hours Q&A, office hours, daily interactions on Discord and the Learning Platform.
* **Project-Based Learning:** Focus on real-world projects for technology adoption.
* **Skill Measurement:** Includes a grading component.
* **Affordable Access:** Free or low-cost attendance models.
* **Community Support:** Open-course and learn-in-the-open strategy.
* **Expert Involvement:** Community experts enhance the quality of our education materials.
* **Custom Platform:** Designed specifically for our unique bootcamp model.
* **Inclusive Commitment:** Women-First experience and enforced T&S Policy

Interested in becoming a sponsor?

* Contact our team to discuss a custom integration option that suits your business needs via [sponsors@cloudprojectbootcamp.com](mailto:sponsors@cloudprojectbootcamp.com)

Deal List Guide

We are going to try and get deals like last time.

Affinity Groups

# Affinity Groups

You can think of groups as a bootcamp within a bootcamp.

We hope that groups kickstart can give special attention and uplift leaders into different communities.

* They have their own group organizer (Principal Coordinator)
* They can have their own community-organized learning track
* They can have their own live-stream
* They can have shared branding
* They can be in a different target language
* They may have a modified Codes of Conduct to meet their needs.

**I have an idea for Affinity Group, How do we create a community?**

* Groups require leadership and so you need to act as an organizer.
* You need to have a vision for your group.
* You need to be self-starter
* You need to sure you are committed and can deliver

You will receive guidance from Andrew on how to best run your group.

**Affiliation with Main Bootcamp**

Your group is promoted on main page

You can a dedicated Discord channel

You can design and have a badge issue for your community members

Your community video content will be part of the official playlist track

You can leverage the existing materials, content and marketing in anyway to get you idea of the group.

**Target Goals**

The minimum requirement is 4 speakers/guest instructors with 30mins to 2 hours with prerecoded.

If you think you can operate your own live-classrooms that would be great.

**I want to be part of an Affinity Group, How do a join?**

Most groups are open to join, some are manually confirm and invite only.

技術講師の依頼

**技術講師の依頼**

Request for Tech Instructors

**課題** (Challenges)

* Language barrier
* Time and day difference
  + eg 7:00 AM ET = 9:00 PM JST. (14 hours)

We are looking for Japanese tech guest instructors who can teach hands-on on how to use GenAI technology.

**条件 (**Requirements)

* We want video instruction to be in Japanese or English
  + Between 30 mins to 2 hours
* We want the videos to be pre-recorded
  + Because live-stream will be too challenging to do the time difference
* We don’t have restrictions or rules for tech content for Japanese tech instructors
  + Because it will be too hard to communicate the requirements.

Other

Andrews Tech Center