Japanese Learning Web App

Business Plan

Contents

[Executive Summary 2](#_Toc185895971)

[Market Research 3](#_Toc185895972)

[Project Objectives 4](#_Toc185895973)

[Features and Functionalities 5](#_Toc185895974)

[User Flow and Experience 6](#_Toc185895975)

[Technical Specifications 6](#_Toc185895976)

[Subscription Model and Monetisation 7](#_Toc185895977)

[Timeline 7](#_Toc185895978)

[Risk Assessment 8](#_Toc185895979)

[Marketing Plan 8](#_Toc185895980)

[Cost Estimation 9](#_Toc185895981)

# Executive Summary

Problem:

Japanese learners…

* Don’t have an instant feedback method for their sentence corrections (ChatGPT is available but requires continuous prompting).
* Don’t have access to personalised feedback on their most common mistakes.
* Don’t have access to short placement tests that measure their Japanese level/progress with feedback.
* Don’t have an idea of what to study, i.e. lack structure.
* Struggle to incorporate what they have learnt practically.

Solution:

A structured app that provides…

* Grammar/Vocab/Kanji lessons.
* Opportunity to practice learnt content using fill in the gaps and sentence rearrangement.
* AI corrections that breakdown your mistakes.
* Flashcards with a spaced-repetition-system.

Target Audience:

* Serious Japanese learners who at the minimum already know hiragana, katakana and basic phrases.

Revenue Target:

* $10,000/month from 1,000 paying users at around $10 a month.

# Market Research

Overview:

* There are over 1 million people who take the JLPT exam annually. Additionally, this is an underestimate due to the number of people who are not JLPT test takers and simply learn as a hobby. By aiming to capture just 1,000 paying users for our first milestone, we are aiming to capture at most 0.1% of the market. Popular resources that current Japanese users use include: Duolingo, Bunpro, WaniKani and LingoDeer.

USP:

* **Personalised AI Feedback:** Real-time, context-specific sentence corrections with detailed explanations.
* **Structured Learning Path:** A guided JLPT N5–N1 path with daily lessons and practice sessions.
* **Comprehensive Approach:** Combines flashcards, practice tasks, AI corrections and SRS, making it a convenient solution for serious learners.
* **Practicality:** Practice features (sentence rearrangement, fill-in-the-gap) that focus on applying what users learn.

Competitors:

* Duolingo:
* **Strengths**:
  + Gamified approach keeps learners motivated.
  + Large user base and engaging UI.
  + Broad accessibility with a free version.
* **Weaknesses**:
  + Lacks depth for advanced learners.
  + Limited focus on grammar and practical application.
  + **Our USP vs Duolingo**:
  + Offers deeper content for serious learners and personalized AI feedback, unlike Duolingo’s broad but shallow gamification.
* Bunpro:
* **Strengths**:
  + Grammar focused with clear JLPT structure.
  + Affordable pricing.
* **Weaknesses**:
  + Minimal interactivity beyond grammar.
  + No AI sentence correction or kanji integration.
  + **Our USP vs Bunpro**:
  + More interactive with kanji SRS, practical exercises and AI corrections, while Bunpro just revolves around grammar.
* WaniKani:
* **Strengths**:
  + Highly effective SRS for kanji and vocabulary.
  + User-friendly interface.
* **Weaknesses**:
  + Limited to kanji and vocabulary, lacks grammar and practice features.
  + No AI sentence correction.
  + **Our USP vs WaniKani**:
  + Combines kanji, vocabulary and grammar with AI-powered explanations and practice, offering more breadth and integration.
* LingoDeer:
* **Strengths**:
  + Emphasises grammar and vocabulary.
  + Interactive and beginner friendly.
* **Weaknesses**:
  + Limited customisation and advanced level content.
  + No AI-powered features for error analysis.
  + **Our USP vs LingoDeer**:
  + Adds AI-powered feedback and practical tasks, catering to learners’ need for error analysis and sentence-level corrections.

# Project Objectives

Core Objectives:

* Build an AI sentence corrector for Japanese learners.
* Provide a clear learning structure from JLPT N5-N1.
* Use flashcards and spaced repetition to aid memorisation.
* Create a revenue-generating subscription model.
* Reach 1,000 paying users within 12 months of launch.

# Features and Functionalities

Core features:

1. **Learning Path**: Users follow a structured path with 3 daily lessons to learn N5–N1 grammar, kanji and vocabulary using flashcards. (For MVP, just focus on N5).

**Kanji**:

* Contains a single kanji and its rough meaning.
* 3 words that contain the kanji are also shown below.
* The main onyomi (Chinese reading) and kunyomi (Japanese reading) are also displayed.
* Display options “I already know this kanji and its readings” and “I haven’t learnt this and kanji and its readings before” to allow users to skip a kanji if they already know it.

**Vocab**:

* Contains a single word or expression and its corresponding English meaning.
* If the vocab contains kanji, furigana is added to keep the focus on the vocab.
* Add an example sentence with the vocab. Make sure that the difficulty corresponds to their JLPT level.
* Add audio for the sentence.
* Add AI functionality to break down the example sentence if needed by the user.

**Grammar**:

* Displays the grammar point and it approximate English meaning.
* Give an example sentence that fits to the user’s JLPT level.
* Add AI functionality to break down the example sentence if needed by the user.

1. **Practice Sessions: In order to solidify the understanding of content from daily lessons in a more contextual setting, 3 tasks are given. There are 2 modes that the user can toggle between: practicing with a focus on missed/difficult flashcards or practicing all flashcards. These practice sessions will also follow their own SRS algorithm.**

**Audio Transcribing:**

* **Users must write what they hear.**
* **This helps users with listening comprehension.**
* **AI functionality is also added for if the user gets it incorrect, an AI breakdown of the mistakes can be given.**

**Japanese Sentence Rearrangement:**

* **A Japanese sentence is jumbled and the user needs to rearrange it correctly.**
* **This helps users understand Japanese word order and structure.**
* **AI functionality is also added for if the user gets it incorrect, an AI breakdown of the mistakes can be given.**

**Fill in the Gap:**

* **A Japanese sentence is given according to the user’s difficulty and the user must fill in the gap with the correct vocab or grammar.**
* **If the user needs a hint, show the English translation.**
* **AI functionality is also added for if the user gets it incorrect, an AI breakdown of the mistakes can be given.**

1. **AI Sentence Corrector**: Users input sentences, and the AI corrects errors and explains why the changes were made.
2. **Flashcard Review**:

* Separate flashcard reviews are incorporated for each section (kanji, vocab, grammar and practice sessions).
* For kanji and vocab reviews, users must input both the English meaning and Japanese reading. And for grammar, users just need to input the English meaning.

1. **Spaced Repetition System (SRS)**: Flashcards are reviewed at optimal intervals to reinforce memory.
2. **Progress Tracking**: Users can see daily/weekly reports as well as do progress/placement tests.

# Site Map and Features List

Webpages:

* **Home Page (MVP)**
* **About/Help (MVP)**
* **Dashboard (MVP)**
* **Flashcard Review Page (MVP)**
* **Flashcard Learning Page (MVP)**
* **AI Sentence Corrector (MVP)**
* **Practice Session (MVP)**
* JLPT Level List Page (Future)
* **User Setting (MVP)**
* **Pricing Page (MVP)**

Webpage Details:

**Home Page**:

* Navbar to different pages
* Login/Signup button
* Daily lessons and practice session
* Review forecast
* Basic stats: Number of flashcards a user has on each level and flashcard type; JLPT progress

**About/Help Page**:

* Learning methodology and how to use the web app

**Dashboard**:

* Number of flashcards a user has on each level and flashcard type
* JLPT progress
* Longest streak and current streak
* Graphs showing learning rate (flashcards over time for kanji, vocab, grammar and total)
* Display forecast graph using learning rate (e.g. “at this rate you will reach n4 in 2 months”)
* Total accuracy and accuracy for of each section as well top 5 least accurate flashcards

**Flashcard Review Page**:

* Flashcard with its example sentence and its audio
* Answer box for user

**Flashcard Learning Page**:

* Flashcard and all its details
* Option to skip flashcard if already known

**AI Sentence Corrector**:

* Input box for user to input sentence
* Correction space

**Practice Session**:

* Display fill in the gap, rearrange the sentence activity or translation into English
* Breakdown button to breakdown user mistake with AI

**User Setting**:

* Edit user details
* Logout option

**Pricing Page**:

* Display Pricing plan (free and premium)

# User Flow and Experience

1. **Sign Up / Log In**: User creates an account.
2. **Select Starting Level**: User either takes a placement test or selects their current level (N5 – N1).
3. **Select Study Plan**: User selects how many lessons per day they want to cover.
4. **Daily Lessons**: User is presented with 3 daily lessons of flashcards (kanji, grammar, vocab).
5. **Practice Sessions**: User practices content from daily lessons in a more practical context.
6. **Review**: Review learnt content using flashcards with spaced repetition.
7. **Progress Tracking**: Users can see their streak, progress within a level (e.g. N5 50% complete) and personal reports.

# Technical Specifications

Tech Stack:

* **Frontend**: Next.js, Tailwind CSS
* **Backend**: Node.js, AWS Lambda, API Gateway
* **Database**: AWS RDS (PostgreSQL)
* **AI/ML**: OpenAI API, Python, AWS SageMaker / EC2, call with Lambda
* **Hosting**: AWS Amplify / Vercel

# Subscription Model and Monetisation

Pricing Options:

Free Plan:

* 1 lesson/day (kanji, grammar, vocab).
* 5 sentence corrections/day using AI.
* 50 flashcard reviews/day.

Premium Plan:

* Unlimited lessons, flashcards and corrections.
* Progress reports and personalised study plans.

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# Timeline

**Month 1 (January 2025): Planning, Groundwork & AI Feasibility**

1. **Scope Definition & MVP Planning** (Week 1–2)
   * Finalise MVP features: AI corrections, daily lessons (N5 focus) and SRS.
   * Prioritise user flows: onboarding, lesson navigation, flashcard reviews and AI sentence correction.
   * Draft detailed technical specifications.
2. **Content Sourcing (N5)** (Week 1–3)
   * Collect/create N5-level flashcards for kanji, vocab and grammar.
   * Research and create example sentences, translations and audio files.
3. **AI Feasibility Testing** (Week 1–2)
   * Experiment with OpenAI API to assess token usage and response quality.
   * Test prompts with common N5 mistakes to refine initial AI logic.
4. **Technical Setup** (Week 2–4)
   * Initialise the project repositories (frontend, backend) and define folder structures.
   * Set up PostgreSQL database schema for users, lessons, flashcards and progress.
   * Deploy basic infrastructure on AWS (Lambda, RDS, API Gateway).
5. **Wireframes & User Flow Design** (Week 3–4)
   * Design wireframes for:
     + Onboarding/sign-up flow.
     + Lesson pages (kanji, vocab, grammar).
     + Flashcard reviews.
     + AI correction interface.

**Month 2 (February 2025): Backend & Frontend Foundation**

1. **Backend Development** (Week 1–4)
   * Implement user authentication (/register, /login, /logout).
   * Create CRUD endpoints for:
     + Lessons (/flashcard/lesson).
     + Flashcard reviews (/flashcards/review).
     + Progress tracking (/progress).
   * Add a placeholder /correct AI correction endpoint for testing.
2. **Frontend Development** (Week 1–4)
   * Build React components for:
     + Sign-up/login.
     + Dashboard.
     + Lesson pages (kanji, vocab, grammar display).
   * Fetch and display lesson content from the backend.
3. **Content Input (N5)** (Week 2–4)
   * Populate the database with at least 1–2 weeks’ worth of N5 content.
   * Add corresponding audio and translations for flashcards.
4. **Early Internal Testing** (Week 3–4)
   * Test user flows end-to-end: sign-up, lessons, and flashcard reviews.
   * Validate that AI correction works with basic N5 examples.

**Month 3 (March 2025): SRS Logic & Practice Features**

1. **Spaced Repetition System (SRS)** (Week 1–2)
   * Implement the SRS algorithm (interval calculations, review scheduling).
   * Update /flashcards/review endpoint to reflect SRS logic.
2. **Flashcard Review UI** (Week 1–2)
   * Create flashcard review interface with input validation for readings and meanings.
   * Display SRS-based feedback (e.g., "Next review in 3 days").
3. **Daily Lessons** (Week 2–3)
   * Automate the delivery of 3 new lessons per day (kanji, vocab, grammar).
   * Track user completion and update progress in the database.
4. **Practice Tasks** (Week 3–4)
   * Implement sentence rearrangement and fill-in-the-gap exercises.
   * Add AI explanations for incorrect answers.
5. **Progress Dashboard** (Week 3–4)
   * Develop a basic dashboard to display:
     + Daily streaks.
     + Total kanji/vocab/grammar learned.
     + Flashcard performance.
6. **Closed Beta Testing (Phase 1)** (Week 4)
   * Invite a small group of testers (friends, classmates) to test lessons, SRS and AI corrections.
   * Collect initial feedback on usability and feature clarity.

**Month 4 (April 2025): UI Polish & Feature Refinement**

1. **UI/UX Improvements** (Week 1–2)
   * Add progress bars, hints and tooltips to improve user experience.
   * Optimise layouts for mobile responsiveness.
2. **AI Refinements** (Week 1–3)
   * Fine-tune AI prompts for better correction explanations.
   * Test edge cases for grammar, vocab and politeness levels.
3. **Expanded Content (N5 & N4)** (Week 2–4)
   * Add more N5-level content (e.g., additional sentences, examples).
   * Begin sourcing N4-level material for future lessons.
4. **Subscription Model Setup** (Week 2–4)
   * Integrate Stripe or PayPal for payment processing.
   * Implement limits for free users (e.g., 5 corrections/day).
5. **Extended Beta Testing (Phase 2)** (Week 3–4)
   * Expand to 30–50 testers, including language learners from forums.
   * Collect detailed feedback on AI corrections and SRS performance.

**Month 5 (May 2025): Public Beta Rollout & Marketing**

1. **Public Beta Launch** (Week 1)
   * Release the beta version to the public.
   * Announce in language-learning communities (Reddit, Discord, forums).
2. **Marketing Campaign** (Week 1–3)
   * Launch social media presence (YouTube, Instagram, TikTok) with short Japanese-learning content.
   * Collaborate with influencers to showcase app features.
3. **Analytics & Optimisation** (Week 2–4)
   * Monitor AWS costs and AI token usage.
   * Optimise endpoints to reduce latency and unnecessary API calls.
4. **Refine Monetisation Strategy** (Week 3–4)
   * Evaluate feedback on pricing ($10/month) and adjust if needed.
   * Offer referral discounts or early-bird pricing for premium users.

**Month 6 (June 2025): Official Launch & Future Planning**

1. **Feature Finalisation** (Week 1–2)
   * Ensure all core features (AI corrections, SRS, daily lessons, practice tasks) are polished.
   * Add minor enhancements (e.g., dark mode, advanced progress insights).
2. **Official Launch** (Week 2)
   * Announce the official release on platforms like Product Hunt, Reddit and social media.
   * Offer limited-time promotions to encourage premium upgrades.
3. **Post-Launch Analytics** (Week 2–4)
   * Monitor user retention, subscription rates and common drop-off points.
   * Use feedback to tweak onboarding and lesson sequences.
4. **Roadmap Planning** (Week 3–4)
   * Outline next steps: N4/N3-level content, community features or advanced AI refinements.
   * Collect testimonials and user success stories for marketing.

# Risk Assessment

Risks to Consider:

* **AI Accuracy**: How will you ensure that AI provides meaningful and accurate corrections/translations?
* **Churn**: How will you keep users subscribed for 6-12 months.
* **Competition**: How will you outshine resources such as WaniKani, BunPro or Duolingo.

Mitigation Plan:

* Use AI models (like OpenAI GPT) for better corrections.
* Gamify the app (streaks, flashcards) to increase retention.
* Offer unique features like **instant feedback** and **flashcard generation**.

# Marketing Plan

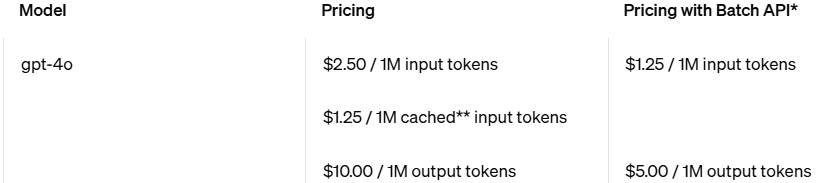
Acquisition Channels:

* **Reddit & Discord**: r/LearnJapanese, JLPT Discord group and student forums.
* **Content Marketing**: Create SEO content on YouTube, Tiktok or Instagram.
* **Influencers**: Partner with YouTubers who teach Japanese.
* **Launch Sites**: Use **Product Hunt, IndieHackers** and launch newsletters.

# Cost Estimation

Costs to Consider:

1. OpenAI API Usage:

* 1,000 tokens ≈ 750 words → 1M tokens ≈ 750,000 words.

1. Hosting Fees:
2. **AWS Lambda**:

* **Free Tier**:
* 1M requests + 400,000 GB-seconds compute/month.
* **Paid Tier**:
  + $0.20 per 1M requests.
  + $0.0000166667 per GB-second.

**$1–$5/month** for low usage (10,000 – 100,000 requests).

1. **AWS RDS**:

* **Free Tier**:
  + 20 GB storage.
* **Paid Tier**:
  + $15–$25/month for small storage and light traffic (e.g. db.t4g.micro, 20–30 GB).
  + $50/month for medium traffic (e.g., db.t3.small, 50–100 GB).

**$15–$50/month** depending on storage and instance size.

1. **Frontend Hosting with EC2**:

* **Small Instance (t4g.micro):** ~$9/month.
* **Medium Instance (t3.small):** ~$20/month.

**$9–$20/month** depending on instance size.

**Total**: **$25–75$/month**