

PREP YOU AI

**Design, Development, and Evaluation of
PrepYou AI – An AI-Driven Interview Training
Platform.**

*Changemakers: Creativity and Value Creation -
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**Prepared by: David Lopez Rodriguez
id: 2336542**



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Introduction

This assessment provides an overview of the project management fundamentals for the proposed product PrepYou AI a platform that will allow junior developers to practise technical, behavioural and system design interviews resolving a critical issue many students face when they apply for roles in the early stage of their career. The section project management states the project scope, objectives and constraints, as well as the technologies and resources necessary to complete an MVP. The section enterprise and innovation explains the timeline and schedule layout a 1 year Agile development plan with specific milestones. A decision is also made to use Scrum as a development methodology due to its adaptability and suitability for iterative AI development. The last two design artefacts, an ERD and User Flow, visually demonstrate the platform's structure and intended functions.

TASK 1 – PROJECT MANAGEMENT

1.1 Project Scope

The aim of the project is to create and deploy an AI Interviewer web platform to help junior developers prepare and practise three main types of interviews: technical / coding interviews, behavioural / fit interviews and system design discussions. Users can input a job description, select interview settings and conduct a real-time practice interview. The platform then provides automatic feedback on performance based on a session transcript.

In order to achieve the goal a web application built with Next.js, using a PostgreSQL database managed with Prisma and an inference backend powered by a OpenAI fine-tuned model are the selected goals. Interview sessions, transcripts and analytics persisted in the database, then made available to the user via a React UI Dashboard. Core components are an MVP platform, interview engine, feedback engine, database schema, AI model training pipeline, CI/CD workflows, and branding/social media marketing assets.

Assumptions and Constraints.

To build the final solution a group of 5 developers would be ideal and to cooperate Github and Trello are the chosen technologies.

1.2 Technologies & Resources

Frontend will be built in Next.js. Chosen for its performance, routing options and modern React tooling. Prisma ORM gives type-safe access to a PostgreSQL database. This is started on Railway, with a view to moving to AWS RDS as the app scales. A custom AI model will be fine-tuned on OpenAI's infrastructure. File storage and static assets will be hosted on AWS EC2/S3. GitHub Actions is used for CI/CD. All developers have access to macOS machines with standard workstation spec.

1.3 Project Timeline & Schedule

Following best practice in schedule management, an effective project timeline must define task decomposition, interdependencies, duration estimates, and risk evaluation [2]. This project adopts a one-year development schedule with weekly sprints:

- Months 1–2: Core interface, onboarding, initial architecture, Prisma + Railway setup → *Milestone 1*.
- Months 3–4: Interview engine (phase 1), job description parsing, turn-taking logic → *Milestone 2*.
- Months 5–6: Feedback system, analytics dashboard, basic scoring metrics → *Milestone 3 (MVP ready)*.
- Months 7–9: Dataset creation, fine-tuning of custom OpenAI model, evaluation & integration → *Milestone 4*.
- Months 10–12: Subscription model, full dashboard, model refinement, beta launch → *Milestone 5*.

Gantt charts are used to visualise these phases and have been shown to significantly improve project control and outcomes in complex software initiatives [2].

1.4 Development Method

This project uses Agile/Scrum as the software development methodology, as it is appropriate for large and complex software with a dynamic environment. Agile methodologies are most appropriate to 21st century software development needs due to the need for flexibility, responsiveness, and uncertainty management [4]. As the interview logic, AI behaviour, and user experience all require constant tweaking, Scrum enables work in short iteration cycles with immediate feedback.

Studies have also shown Agile projects are 4 times more likely to succeed than waterfall style projects [4], and the adoption of Agile practices has been shown to increase communication, quality, and speed of delivery [4], which has been the case with the needs of this platform as well. Weekly sprints will be used, including sprint planning, daily 15 minute stand-ups, end of sprint reviews and retrospectives. Trello is used for task flow management, and GitHub for the collaborative development.

1.5 Project Design

Software visualisation plays a critical role in understanding system structure, dependencies, and architecture [3]. Two design artefacts are included:

1. Entity Relationship Diagram:
Entities include *User*, *InterviewSession*, *Transcript*, *Feedback*, *JobDescription*, *InterviewType*, and *Subscription*. These represent the core data model supporting storage, analytics, and user workflows.
2. User Flow Diagram:
The user journey proceeds through: onboarding → selecting interview type → providing job description → configuring parameters → completing AI-driven mock interview → receiving detailed feedback → reviewing analytics in the dashboard.

Visual diagrams significantly improve clarity, communication, and maintainability in software engineering [3].

TASK 2 – ENTERPRISE & INNOVATION

2.1 PEST Analysis

Political:

To operate internationally, PrepYou AI must comply with global AI governance frameworks like GDPR and UK GDPR, and future AI regulations. Studies indicate high risk levels associated with using AI for recruitment, including issues related to discrimination, privacy, and opacity [10]. Transparency and fairness are critical for complying with regulations. The political environment in the UK is supportive of responsible AI innovation, with national initiatives emphasising ethical AI and encouraging adoption across the education and training sector. This creates a favourable political landscape for PrepYou AI, especially if the solution can ensure minimal data collection and avoid making autonomous hiring decisions.

Economic:

The global AI market is growing, and organisations are increasingly turning to AI-powered recruitment and training tools to lower costs and accelerate hiring. Research supports that AI systems can significantly reduce time-to-hire and operational expenses [11]. The startup can adopt a bootstrapped business model at the initial stage and aim for external funding after the MVP is proven to gain traction. A subscription-based pricing model (\$20/month, \$180/year) is predictable and recurring, which is ideal for a SaaS-based product.

Social:

The social driver for PrepYou AI is improving junior developer employability. Studies demonstrate that candidates have strong concerns over fairness and transparency in AI hiring systems, which validates the importance of developing tools not for evaluating candidates but for empowering them [10]. By providing a democratised access to interview preparation, PrepYou AI can help bridge the gap and support learners who may not have access to professional coaching. The talent acquisition needs of junior developers are part of the broader “war for talent,” which motivates individuals and institutions to invest in training technologies that can better prepare candidates [10].

Technological:

The field of conversational AI and automated candidate assessment solutions is rapidly evolving, and PrepYou AI would find itself in an opportune technological environment. AI systems have been found to outperform humans at pattern recognition tasks like matching skills and interpreting behaviour [11]. The use of AI interviewers and the development of life-like AI interview simulations have been proven possible in research studies [7]. PrepYou AI’s competitive advantage over basic chatbot services is the fine-tuned custom model and real-time interview engine.

2.2 SWOT Analysis – PrepYou AI

Strengths:

PrepYou AI is focus in fast-growing sub-niche: interview training for junior developers. Studies have shown AI analysis can make feedback more consistent, help reveal hidden patterns in responses, and be available 24/7 [10]. Having both a custom fine-tuned model and a real-time simulation engine will provide a great technological foundation to start from.

Weaknesses:

The biggest roadblock that need to be addressed are the lack of a large training dataset and lack of an initial proprietary model. Studies also states candidate distrust for AI systems that are not transparent [10], so adequate communication in this area is a must. Training a sophisticated model will also be a cost center.

Opportunities:

There is also a growing demand for HR and EdTech AI solutions with AI in HR expected to grow even further in the coming years [11]. Universities and coding bootcamps are lacking in effective training methods for interviews, which will make B2B a very strong option. There is a clear gap in the market with no premium quality real-time mock interview platforms for junior developers.

Threats:

Algorithmic bias is also a known issue, with AI systems being shown to have been able to replicate historic discrimination unintentionally, which can easily turn away potential users [9]. Fine-tuning and inference costs are also expected to increase with more usage.

2.3 Legal & Ethical Considerations

PrepYou AI is compliant with the principles of GDPR, including fairness, transparency, data minimisation and purpose limitation [10]. PrepYou AI does not store audio or transcripts, only feedback, which minimises these risks. Model behaviour is transparent.

2.4 Start-Up Identity

Name: PrepYou AI

Business Type: UK Limited Company (Ltd)

Brand Concept: Ethical, accessible, AI-powered interview preparation designed for junior developers.

2.5 Business Strategy

Target Market:

Junior developers looking for work, and universities and coding bootcamps who need scalable interview training software. According to Tech Nation, there is a widening skills gap for people with AI and software engineering experience, which indicates a large TAM [6].

Price:

\$20/month or a discounted \$180/year for the annual plan. Customers are given one interview for free, to lower the barrier to entry.

Value Proposition:

Practice interviews with AI anytime, anywhere. Personalised interview feedback to improve your performance and keep practicing. Democratise access to the kinds of interviews professional services use.

Point of Differentiation:

Own fine-tuned model and real time interview engine, built specifically for developer interviews, as well as a strong ethical position.

Go-To-Market:

Leverage partnerships with universities and coding bootcamps, reach out to professionals through LinkedIn, and academic partnerships.

2.6 Funding Opportunities

Innovate UK: Due to the academic quality, and especially the societal impact, early-stage funding should be possible through Innovate UK. Angel Investment: There is an established AI investment sector in the UK, so later stage angel funding is possible [6]. University Enterprise Support: Universities are also keen to support AI training tools to help solve the skills gap. Bootstrapping: The MVP can be started with low infrastructure costs, so little money need be risked early on.

PERSONAL REFLECTION

3.1 Skill Development

The project provides an excellent opportunity for significant growth from both a technical and professional standpoint.

The biggest technical growth area will be around fine-tuning a custom AI model. There is a large component of experimentation required in this area. As Dadaboyev et al state, AI systems are reliant on the quality, diversity, and structuring of the data that is used to train them [8]. This is one of the cores differentiating factors in effective AI engineering. Building PrepYou AI will provide me with the ability to move beyond academic understanding and take a first-hand role in designing datasets, performing evaluations for bias, running experiments, and generating a stable model output focused on interview prep.

Professionally, the project will give me the ability to work on improving my project management skills significantly. Orchestrating a development plan that spans across an entire year using weekly sprints, extensive documentation, GitHub-based development and collaboration, and developer accountability measures, we have a real project environment with tools that reflect industry practice.

In the end, the biggest skill I hope to walk away with is confidence in designing and deploying an end-to-end AI system, handling complexity, and confidence in building a product that genuinely helps people.

3.2 Positive Impact on Society

The objective of PrepYou AI is to design an accessible tool that democratises interview preparation. Junior developers often do not have access to personal coaching, industry mentors, or the opportunity to practice in mock interviews. Dadaboyev et al noted that the AI systems eliminate traditional barriers in employment and training by providing scalable, timely and accessible support to individuals who might otherwise be excluded from professional development resources [8]. PrepYou AI can level the playing field for such populations by providing a fair and immediate feedback, which could have a positive effect on employability for people with lower financial means.

3.3 Project Risks & Mitigation

Technical, ethical and business risks have been a core component of the development of AI-based applications. From a technical point of view, two of the primary risks that were considered in the case of this project are those of scaling costs and model hallucinations. The latter, as Mujtaba and Mahapatra describe, can alter model behaviour and lead to incorrect or misleading judgements [9]. For

this reason, I plan to incorporate measures such as dataset audits, regular evaluation and fairness metrics to keep the model stable, consistent and aligned with appropriate behaviour.

In terms of ethical risks, the main potential danger is that the interpretation of a candidate's performance will be inaccurate. AI recruitment tools have been found to offer distorted feedback or manifest hidden bias based on their data source [9]. To mitigate this risk, PrepYou AI will not be used for hiring decisions, but for constructive training feedback.

In terms of business, the primary risk has been high inference costs, this will be offset by careful scaling of the project, optimisation of model deployment and funding from sources such as Innovate UK grants or angel investment once an MVP has shown sufficient traction.

Conclusion

In summary this essay provides a clear picture of what is Prep You AI. It defines the project's scope, timeframe, and development methodology. It also provided a strong base to ensure the platform is built in a scalable and maintainable way. The ERD and User Flow diagrams were helpful in visualizing the system and user interactions. These management task will provide the framework for bringing into life the idea of creating an ai interview trainer for web developers.

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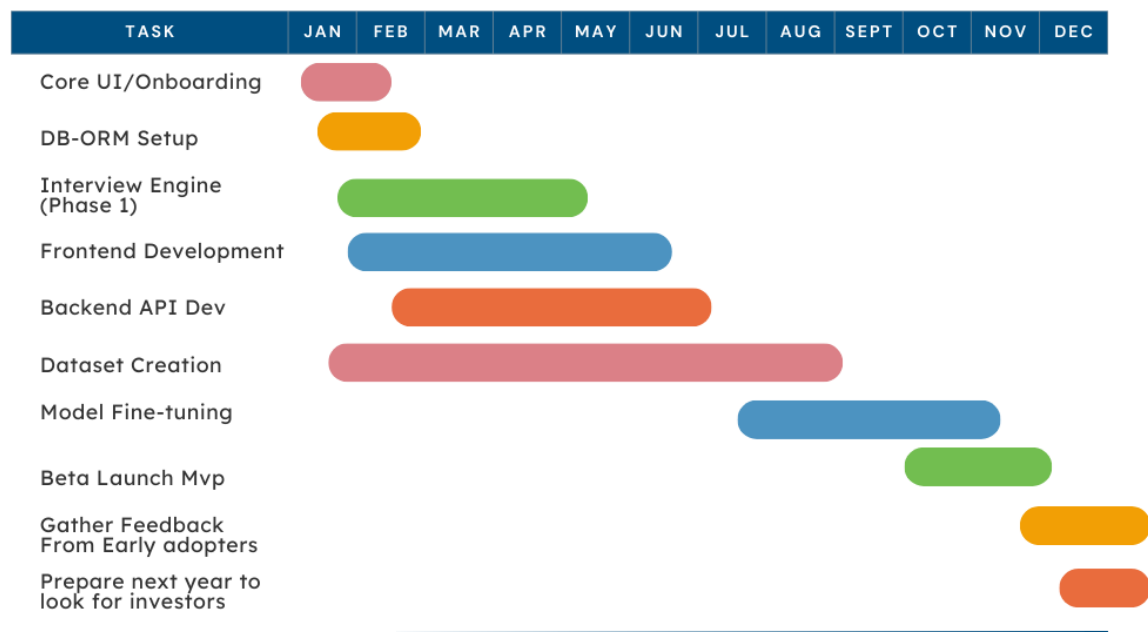
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Appendices

PREP YOU AI - GANTT CHART

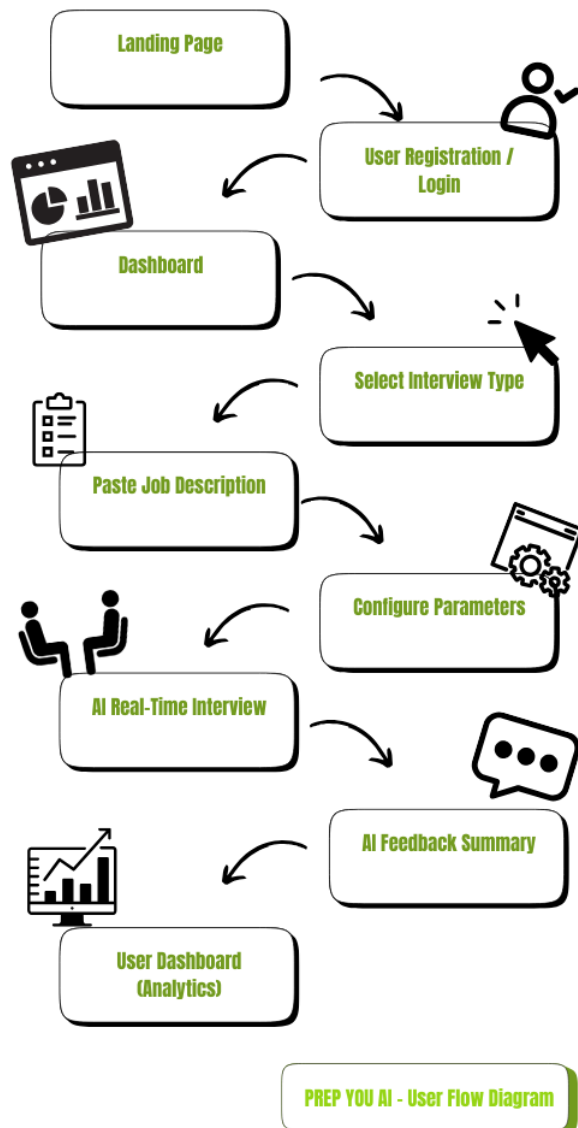


Appendix B – Entity Relationship Diagram



Prep You AI - ERD Chart

Appendix C – User Flow Diagram



Appendix D – Technology Stack Table

PREP YOU AI - TECHNOLOGY STACK TABLE

LAYER	TECHNOLOGY	REASON
FRONTEND	NEXT.JS APP ROUTER 	MODERN ROUTING, REACT SERVER COMPONENTS, PERFORMANCE
BACKEND	NODE.JS 	FAST, SCALABLE, SAME LANGUAGE AS NEXTJS
DATABASE	POSTGRESQL + PRISMA 	TYPE-SAFE, RELATIONAL, SCALABLE
AI ENGINE	OPENAI FINE-TUNED MODELS 	CUSTOM BEHAVIOUR & CONTROLLED OUTPUTS
HOSTING	AWS EC2 / S3 	RELIABLE, SCALABLE INFRA
CI/CD	GITHUB ACTIONS 	AUTOMATED TESTING AND DEPLOYMENT
PROJECT MANAGMENT	TRELLO 	AGILE SPRINT TRACKING

Appendix D – Risk Matrix Table

PREP YOU AI - RISK MATRIX TABLE

RISK	TYPE	LIKELIHOOD	IMPACT	MITIGATION
SCALING COSTS	TECHNICAL	HIGH	MEDIUM	OPTIMISE INFERENCE, EFFICIENT MODEL SIZES
MODEL HALLUCINATIONS	TECHNICAL	MEDIUM	HIGH	DATASET AUDITS, FAIRNESS METRICS
MISINTERPRETING USER PERFORMANCE	ETHICAL	MEDIUM	HIGH	TRANSPARENT EXPLANATIONS & DISCLAIMERS
ALGORITHMIC BIAS	ETHICAL	MEDIUM	HIGH	FAIRNESS-AWARE TRAINING, AUDITS
USER ADOPTION	BUSINESS	MEDIUM	HIGH	STRONG VALUE PROPOSITION, FREE TRIAL
HIGH INFERENCE COST	BUSINESS	HIGH	MEDIUM	GRADUAL SCALING, OPTIMISE GPUS