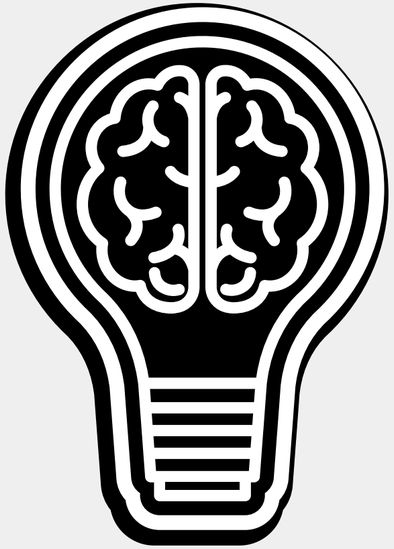


MaestraAI

Learn the way you want!

CSCD54 Assignment 3

Jacob, Aditya, Rachel

Aditya Kulkarni
CS Entrepreneurship 2024
PM @ TribalScale
Published in SIGCSE 2023

Jacob Matias
CS Entrepreneurship 2025
Dev @ Caseware
ESL Teaching

Rachel Kwan
CS Entrepreneurship 2025
Prev Dev @ RBC
Teaching Assistant

User Analysis

USER ANALYSIS

PROFESSORS

ED TECH FOUNDERS

TEACHERS

UNIVERSITY & POST-GRAD STUDENTS

KEY POINTS

PROFESSORS + TEACHERS + EDTECH FOUNDERS

- Student engagement & motivation increases when the content/homework is meaningful to the student
- More engaging and richer learning experiences happen within smaller group settings in online learning
- Instructor-presence & showing students they care can play an important role in student motivation

KEY POINTS

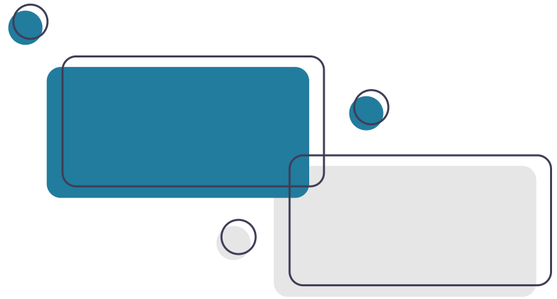
STUDENTS

- Motivation is to explore career paths & to upskill for future job prospects
- Decreasing levels of motivation as course went on
  - course content is dense, repetitive, long and not challenging - difficult to digest
  - would've felt more engaged with more opportunities for application-based learning
- Top Rated courses had outdated content leading to frustration with software tools, and incorrect solutions

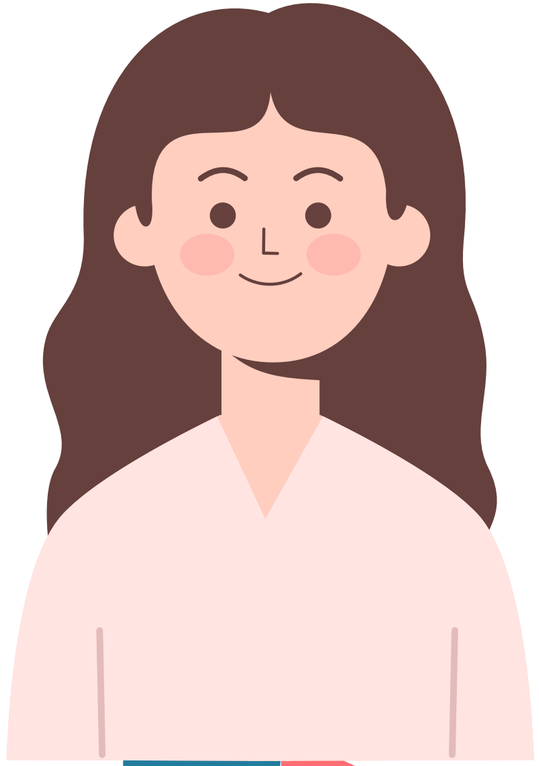
MAIN USERS

- Upper-year university students (3rd year +)
- Post-graduate students
- Professional Learners

Main users are interested in flexible, digestible and accessible online-learning content that will allow them to explore their personal interests and/or upskill for future job prospects

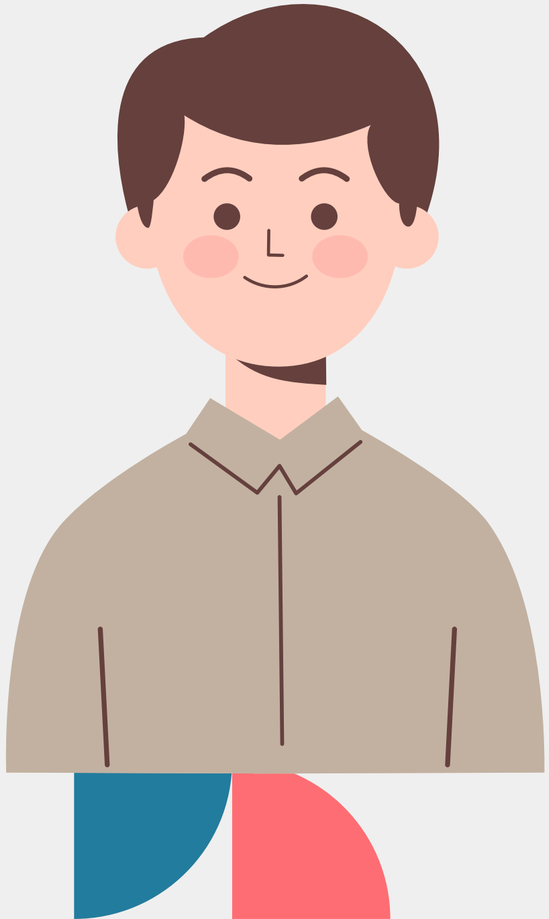


MEET CARRIE,
THE CAREER PROFESSIONAL



- **Age**: 20+
- **Gender**: Female
- **Career Status**: Graduated with a degree
  - wants to switch into a different career
  - looking to upskill beyond degree
  - currently employed at XYZ inc
- **Financial Situation**: Financially insecure
- **Motivations**: Looking to gain knowledge over "status" (not focused on items like certificates)
- **Extra:** other commitments

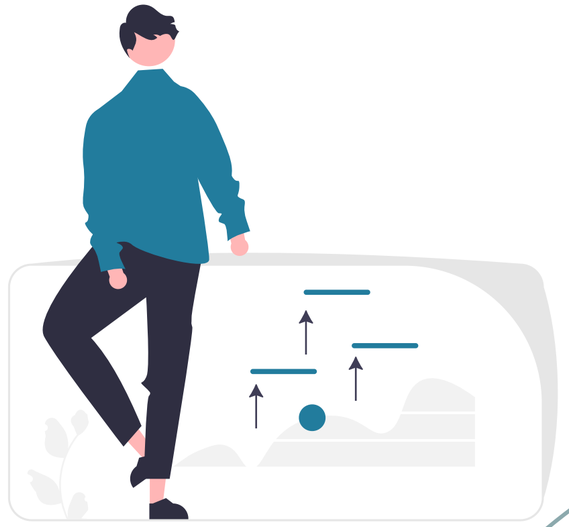
MEET UMAR,
THE UNIVERSITY STUDENT



- **Age**: 18+
- **Gender**: Male
- **Career Status**: Student
    - taking a full-course load
- **Financial Situation**: Financially insecure
- **Motivations**: looking to upskill for a job (internship, full-grad, co-op), wanting to improve resume
- **Extra**: trying to balance his time between school and other activities

PROBLEM

Online courses lack personalization of content according to user competence, interests, and engagement which results in a decreased appeal for the course over time.



SOLUTION

An AI-powered course generation engine that curates content based on users' competence, interests, and personality.

- **Autonomy**: Showing them the value in what they are learning and making the learning meaningful to the students.
- **Competence**: Provide content that is challenging, but not overwhelming.
- **Relatedness**: Finding a way to associate users with a positive identity they relate with.

COMPETITION (DIRECT)

	openAI (Code.org)	TutorAI	Ranedeer

Strengths	• Lesson planner
	• Large dataset
	• Reputation
	• Large customer base
		• On the spot creates different levels of specified material
		• Simple UI
		• Premium ($10/month)
		  ◦ 24/7 hour support
			• Personalized lesson curations based on
			  ◦ Tone style
			  ◦ Communication style
			  ◦ Learning style
			  ◦ Depth
			• Free* (but with costs of GPT token)

Weaknesses	• Limited to text output • Limited to computer science topics • No direct personalization features (follows prompts)	• Limited to text output • Cannot redefine material • Offers same general layout of modules of same topics (ie: physics vs. advanced physics output same module schema)	• Not readily available to the public (open-source project) • No customer reputation • Has to be integrated with Chat-GPT

COMPETITION (INDIRECT)

	Duolingo	Coursera	Teacher	ChatGPT
Strengths	• Content Personalization based on user's knowledge • Gamified Learning Experience • Social integration & engagement options to promote learning/share progress • Comprehensive animations & scoring	• Large set of courses from reputable sources • Online Flexibility & Accessibility • Online collaboration with forums & collaborative projects	• In person interactions for sense of community • Ability to notice student cues and adjust the pace of the course • Accountability	• Large dataset • Customer Reputation • Scales work of teachers/tutors (offering different cost and online alternative) • 24/7 availability
Weaknesses	• Supports learning languages, math, and music only • No personalization of animations based on user interest • Pre-defined lessons and content	• Limited interaction with instructors • Inconsistent course quality because source of courses differ • Lack of accountability	• Difficult to accommodate to specific students' needs • Less flexibility to adapt course material to relevant information • Human error in course content • Subjective bias	• Limited to text output • User Dataset only from previous inputted prompts (less personalization) • Quality of output dependent on input

The Business Model Canvas

Designed for:	Designed by:	Date:	Version:

Key Partnerships

- Investors
- Animators
- AI Engine Providers
- Cloud Providers

Key Activities

- Content Customization
- Web Application development and optimization
- Marketing

Key Resources

- Web App Developers
- Dataset and questionnaires
- Education Experts
- Marketing

Value Propositions

- Content curated based on learner's competency
- Content customized to maximize learner's relatedness
- Content generated to maximize learner's autonomy

Customer Relationships

- Feedback on courses
- Social Media - LinkedIn, Instagram, Discord

Channels

- Web App
- Social Media - LinkedIn, Instagram, Discord

Customer Segments

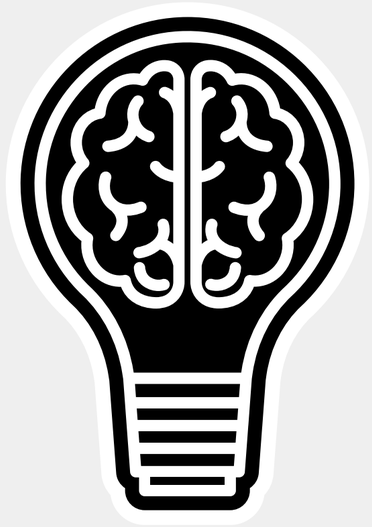
- University Students
- Career Professionals looking to upskill

Cost Structure

- Payroll
- Dataset generation
- Computation and Web services
- Marketing costs
- Taxes
- AI Engines API cost

Revenue Streams

- Customer Subscription
- Premium features leveraging higher levels of AI computation



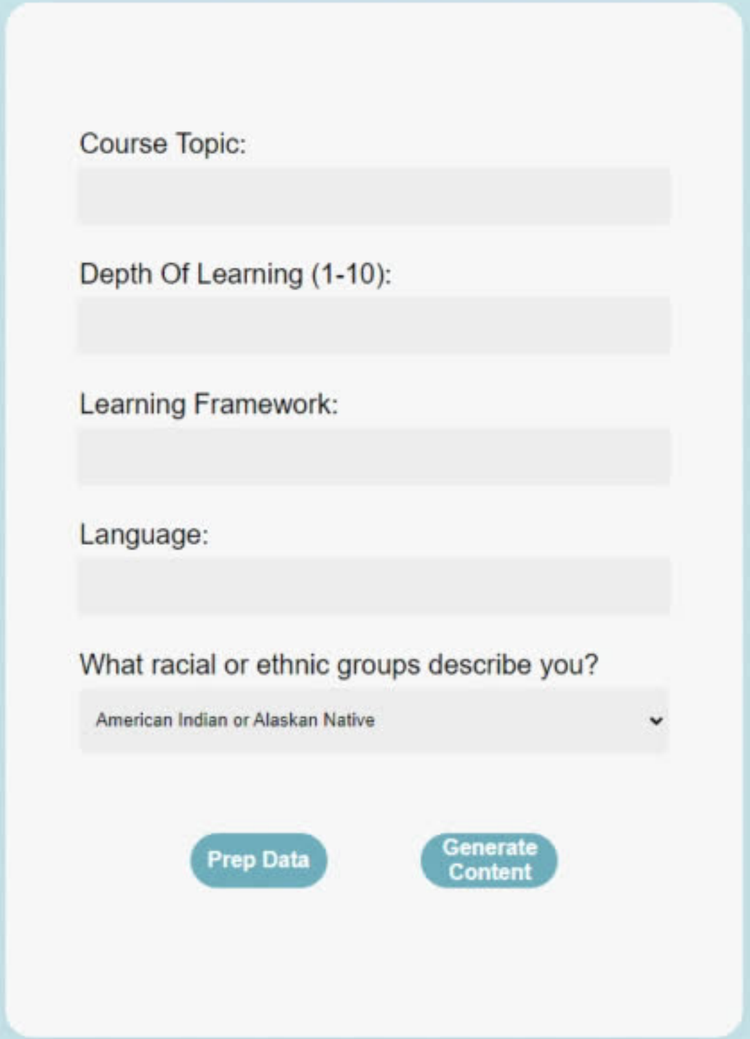
MaestraAI

Learn the way you want!

CSCD90 Assignment 3

Aditya, Jacob, and Rachel

DEMO VIDEO


Course Topic:
Depth Of Learning (1-10):
Learning Framework:
Language:
What racial or ethnic groups describe you?
American Indian or Alaskan Native
Prep Data
Generate Content

DEMO - CURATED VIDEOS

Module Topic: Biodiversity across the planet

Depth Of Learning: 5

Learning Framework: Reflective

Language: French

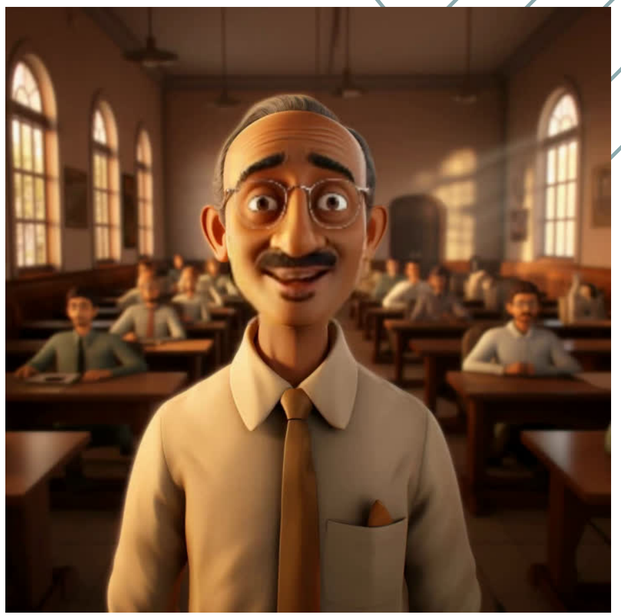
Module Topic: Value propositions in business

Depth Of Learning: 2

Learning Framework: Discovery Learning

Language: English

Geographical Location: London, England



Module Topic: Reasons behind world war II

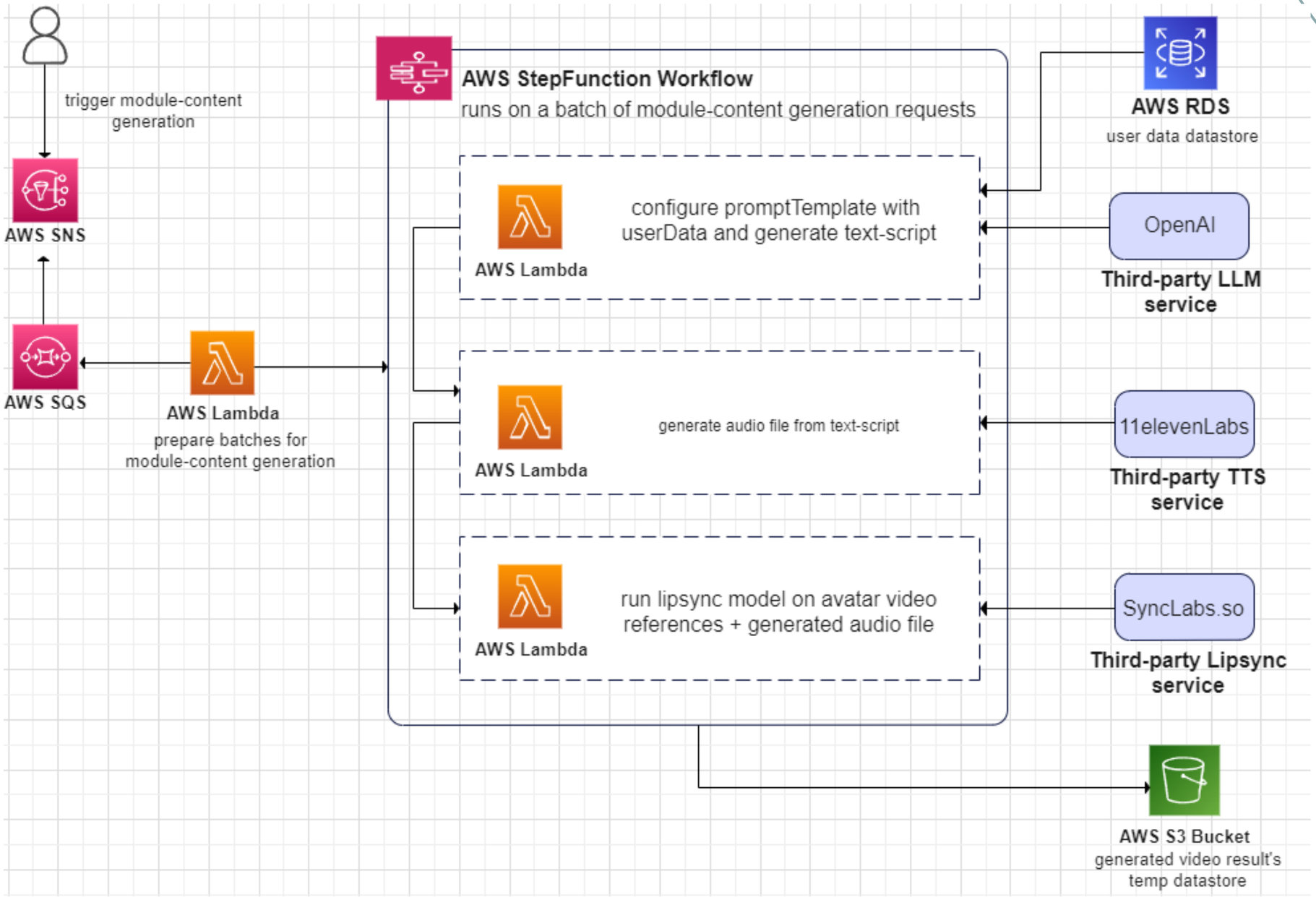
Depth Of Learning: 7

Learning Framework: Socratic

Language: Hindi

Racial Background: Indian

DEMO - ARCHITECTURE (PRESENT) 2



BUILD TEST PLAN

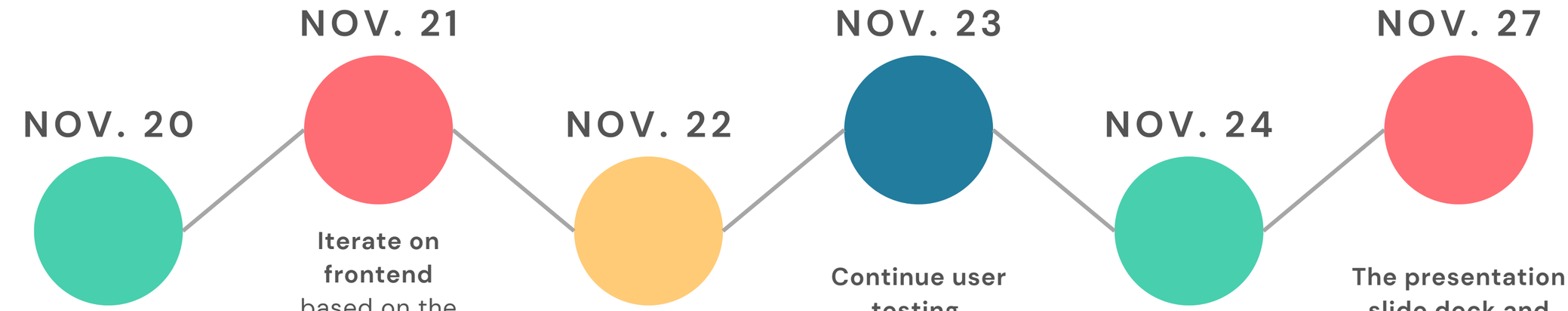
Internal

- QA-produced software
- Try out different courses and generated modules
- Test variations in tonality, delivery, and relatedness of the content
- Create testing modules to monitor effectiveness, efficacy, and perception of content.

External

- Reach out to students/individuals who are currently enrolled in an online course
- Generate similar content to their course and provide them the content
- Test for above-listed factors and collect their feedback

BUILD PLAN



NOV. 20

Review Frontend Draft
(home and interest form pages - stylings, layouts)

NOV. 21

Iterate on frontend
based on the presentation feedback (layouts, frontend).
Start building & planning relevant prompts and avatars for the final presentation

NOV. 22

Finish linking API
data together (elevenLabs & Wav2Lip integration - saving the audio blob as a mp3 file on local and passing it into API)

NOV. 23

Continue user testing
& iterate product based on feedback (front-end UI changes)

NOV. 24

Start final presentation
& demo creation (Create draft plan of demo video and record presentation notes on slides)

NOV. 27

The presentation slide deck and demo video
should be recorded and fully finished.
Start practicing pitch & refine presentation (time adjustments)

APPENDIX

1. User Interview Document
2. Software Architecture Document
3. Comptetitor Analysis