Flashcards App Powered by Alexa

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Objectives

1

Create an application powered by Alexa which enables a user to practice Flashcards

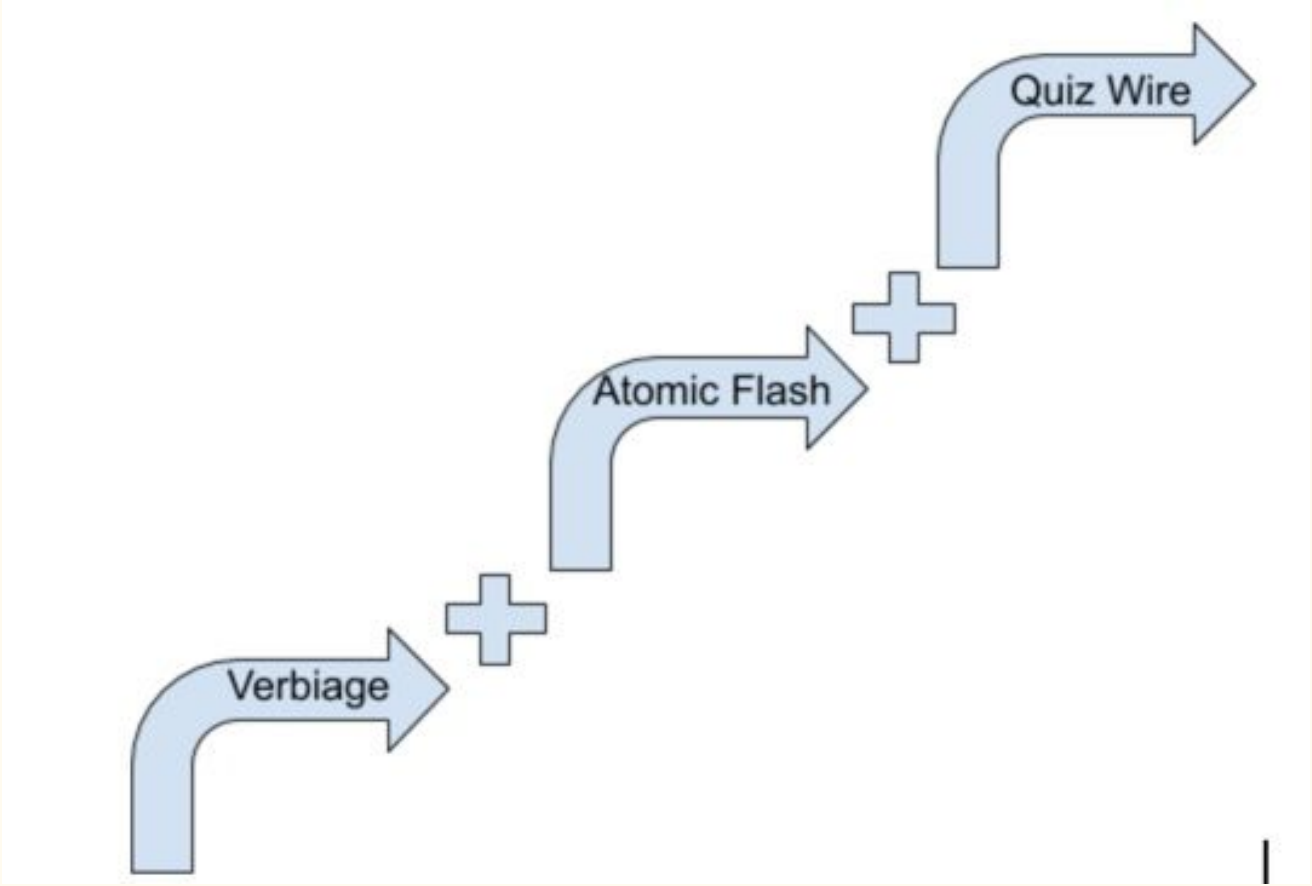
2

Create prototype of app that enables a user to create flashcards on a web-browser and make it available for customized practice using Alexa's Voice Interface

3

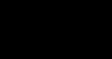
Make Alexa flashcards accessible to one or more users.

Progress

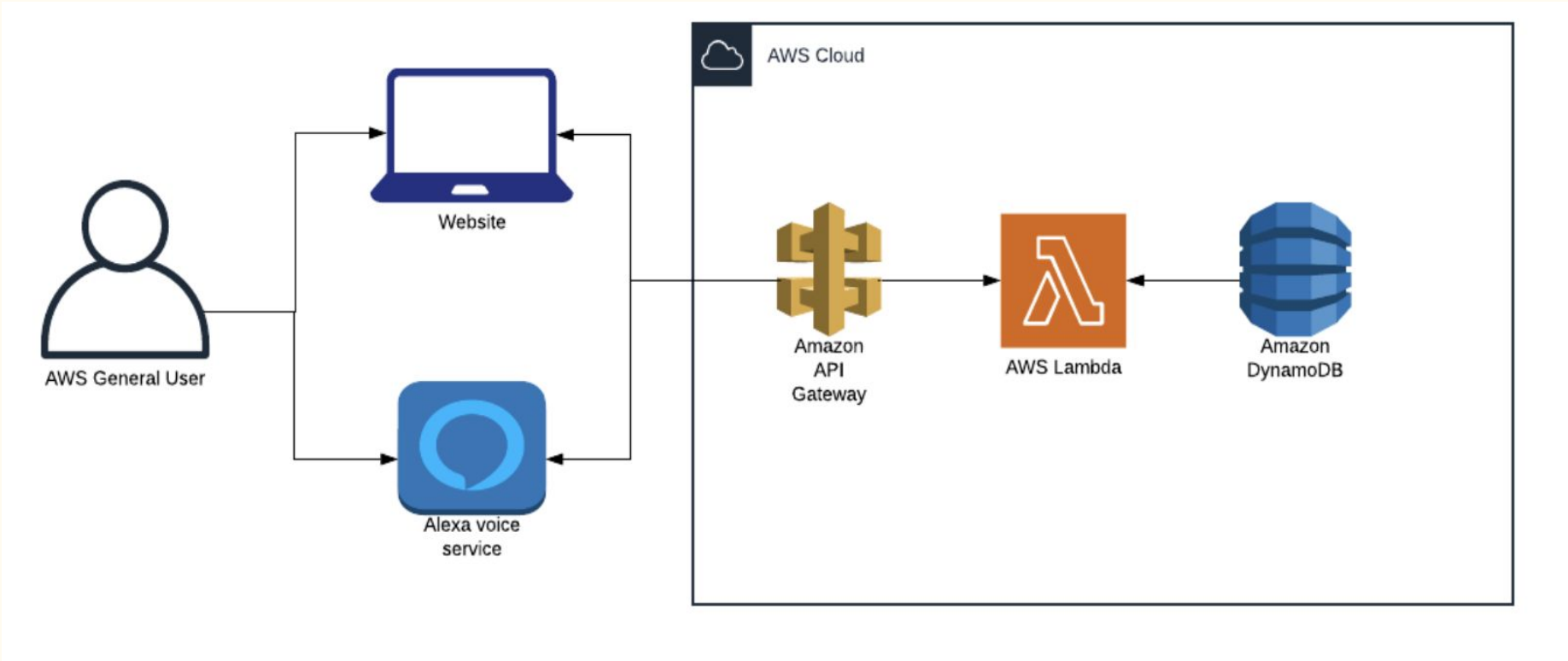


Project Features

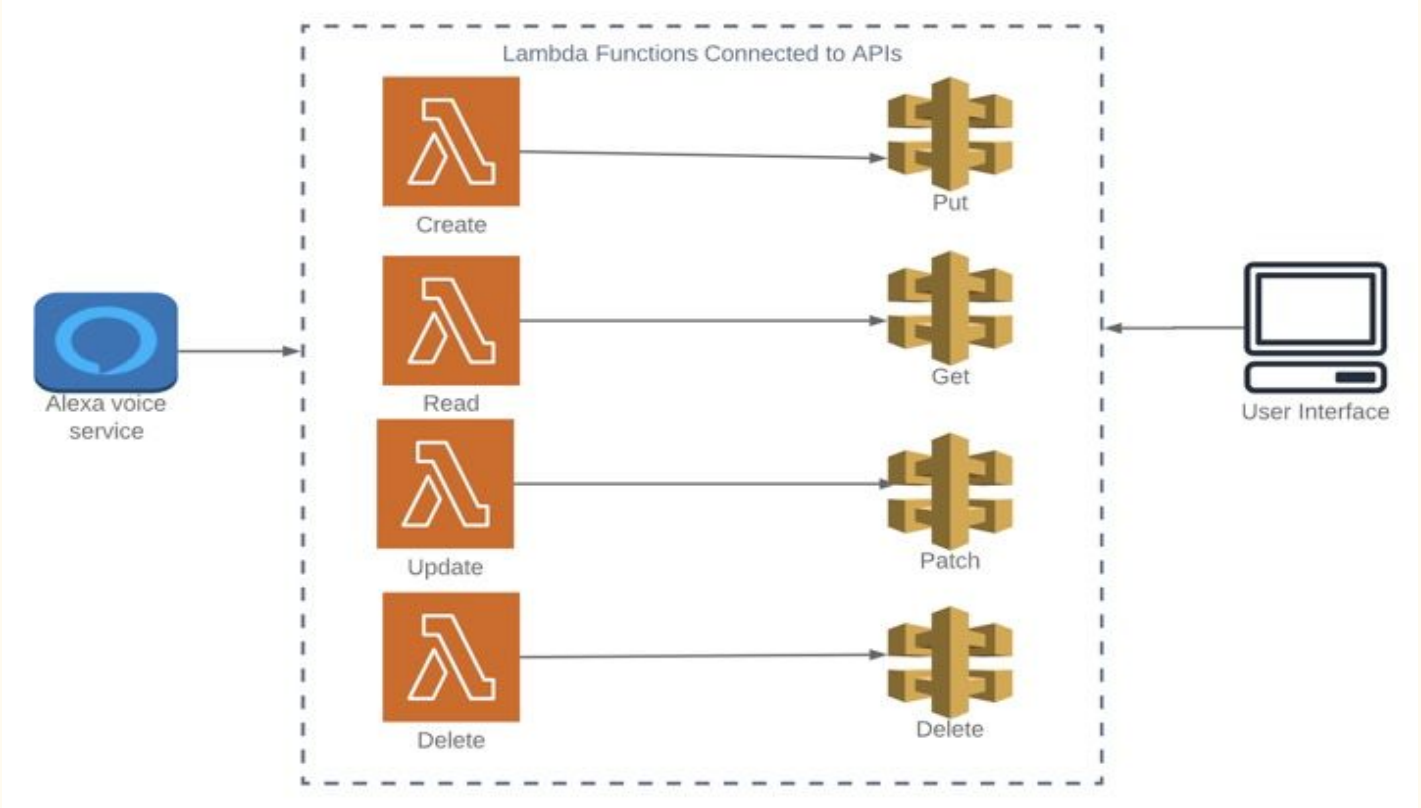
Resources:

- Alexa Skills Kit
- AWS Lambda
- DynamoDB
- API Gateway 
- IAM
- ReactJS Web UI

Implementation



Functions Connected with API Methods



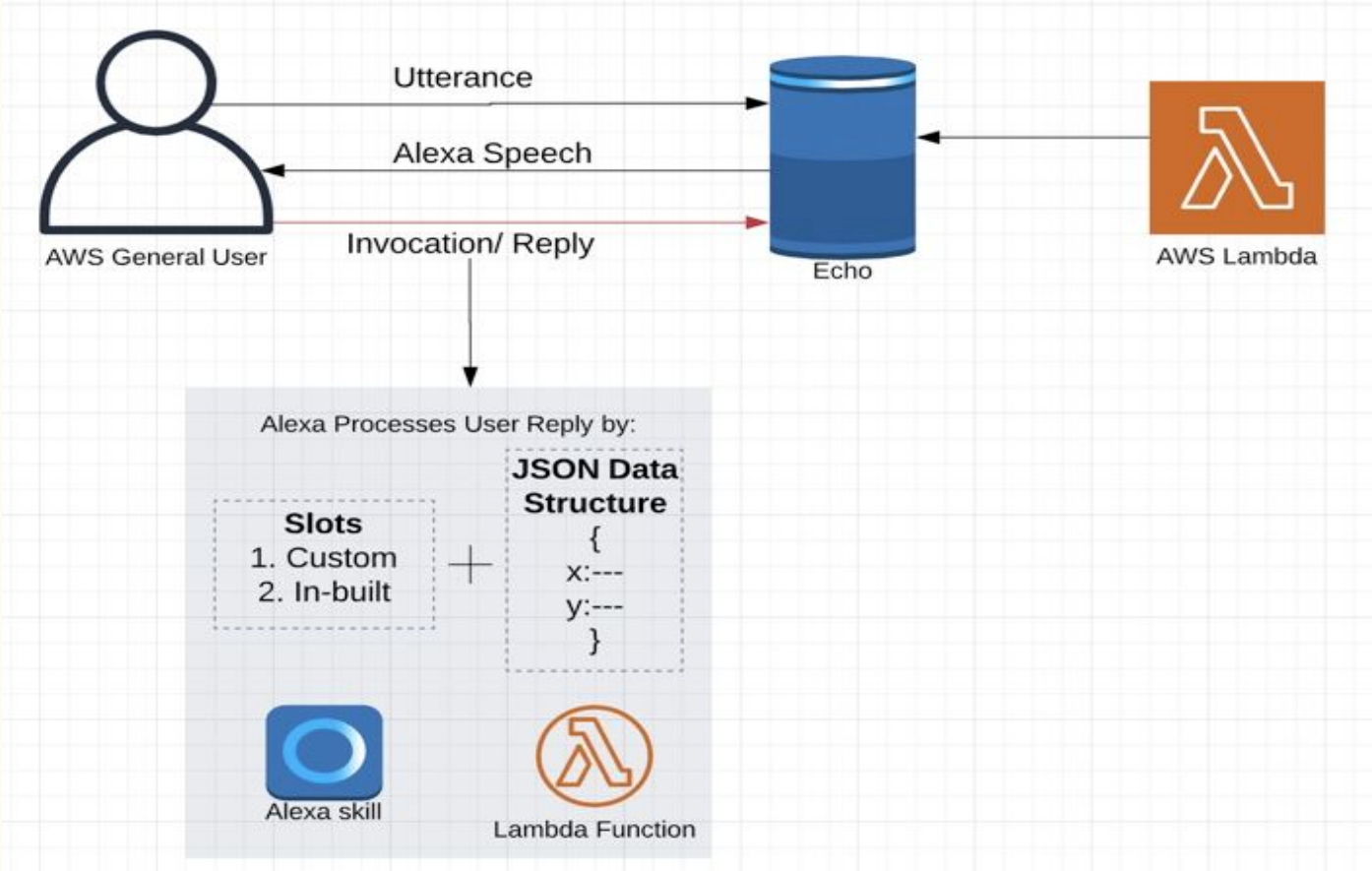
Demo of Quiz-Wire

Intended Conversation Model

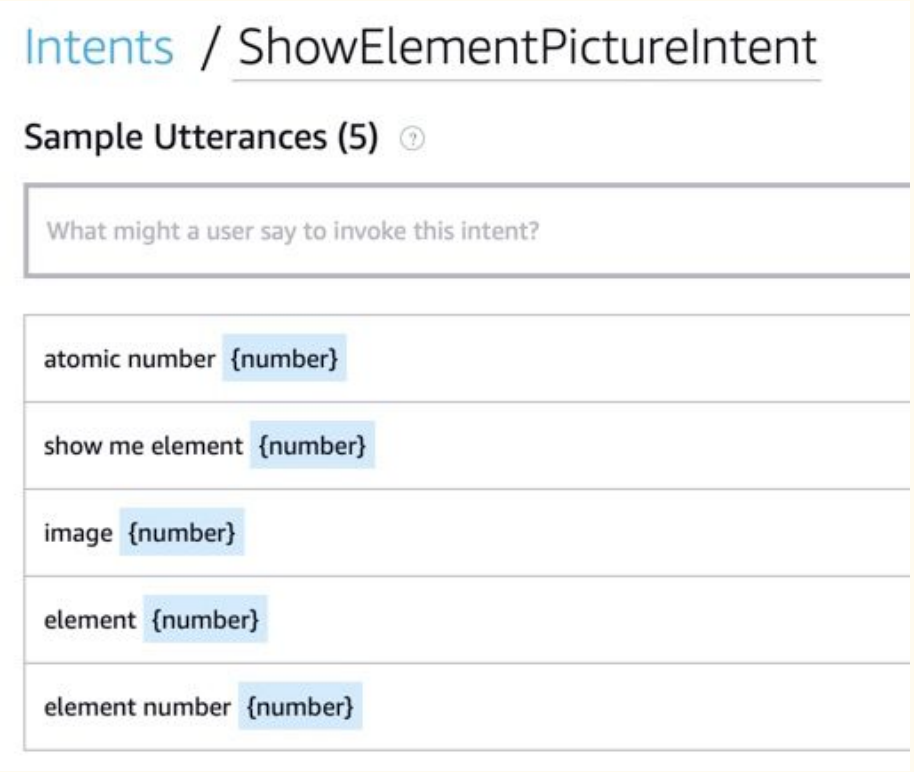
Alexa: Welcome to Quizwire! Let's begin practice. Are you ready? To begin say 'yes' or 'start'.
User: Yes/ start
Alexa: Here is your first question. {Question}?
User: {Correct Answer}
OR
{Wrong Answer}
Alexa: Correct Answer.
OR
Wrong answer. The correct answer is: {Correct Answer}
User: Stop
Alexa: Sure, have a good day!

Gaps?

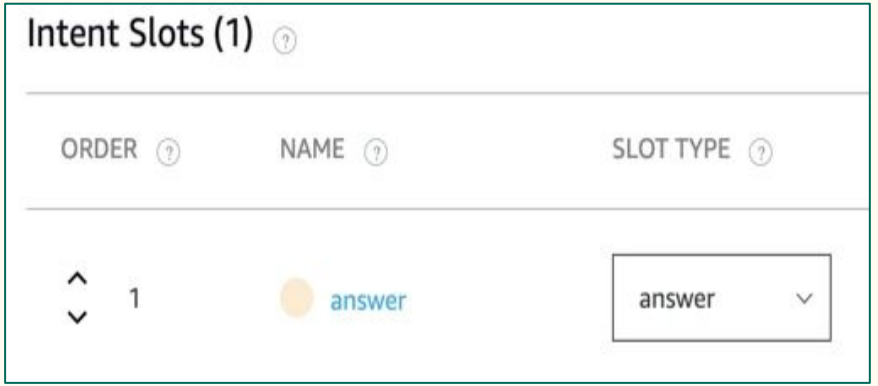
Role of Slots in a Conversation Model



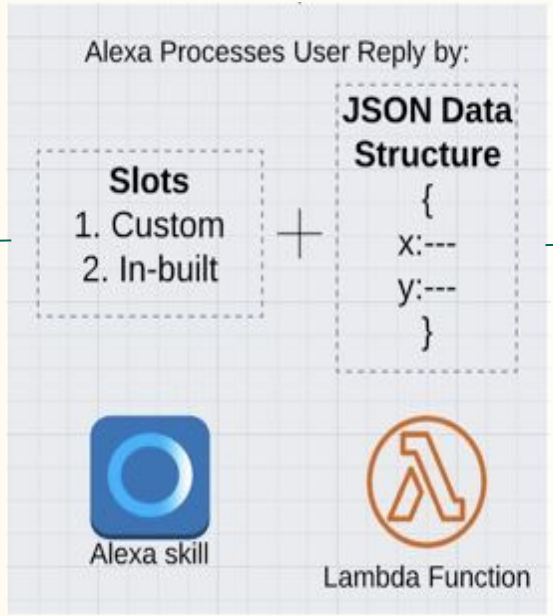
In-Built Slots - Atomic Flash



Custom Slots - Verbiage



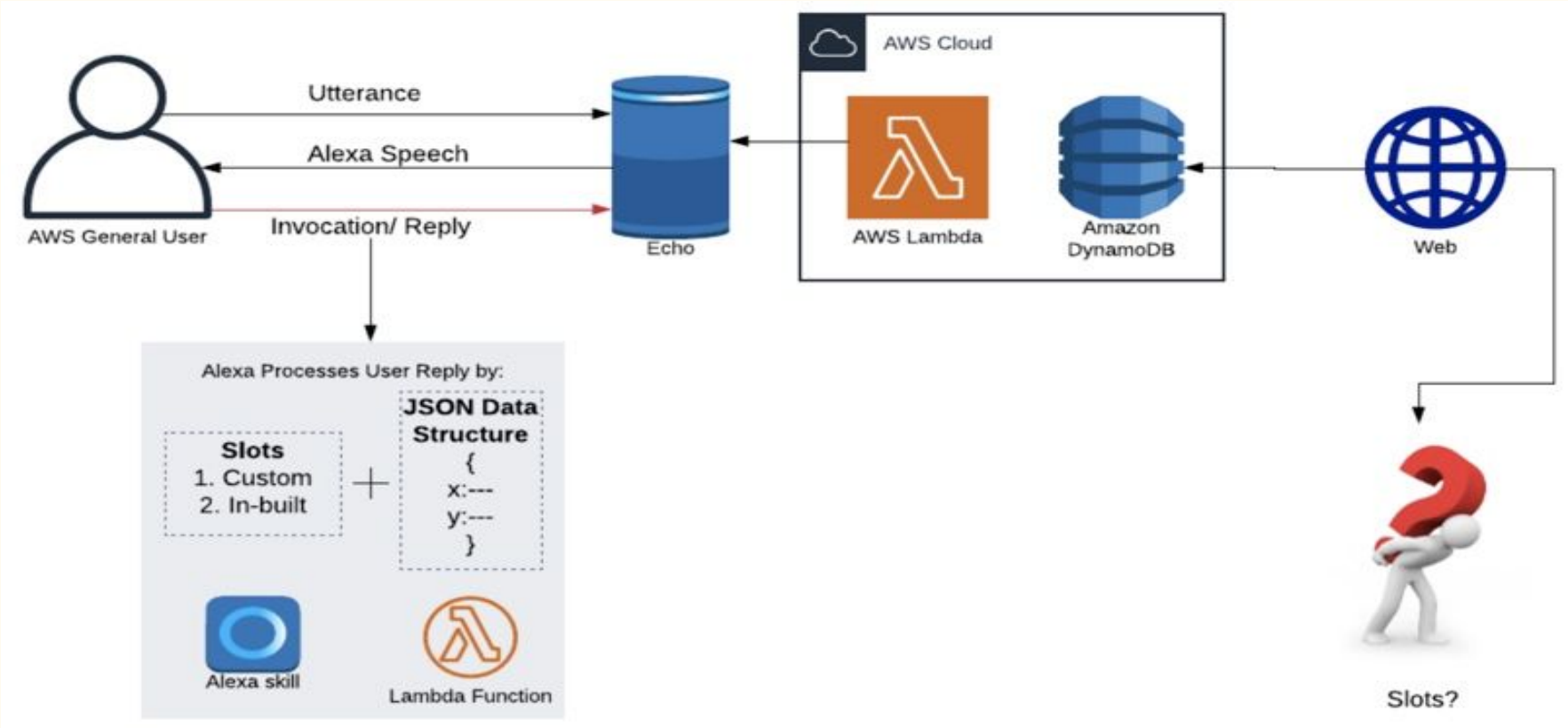
2-Layered Responses Saved for Alexa to Process




```
var flashcardsDictionary = [
  {
    question: 'drink',
    simplepastAnswer: 'drank',
    pastparticipleAnswer: 'drunk',
    bothAnswer: 'drank drunk'
  },
  {
    question: 'sing',
    simplepastAnswer: 'sang',
    pastparticipleAnswer: 'sung',
    bothAnswer:'sang sung'
  },
  {
    question:'swim',
    simplepastAnswer: 'swam',
    pastparticipleAnswer: 'swum',
    bothAnswer: 'swam swum'
  },
  {
    question:'fall',
    simplepastAnswer: 'fell',
    pastparticipleAnswer: 'fallen',
    bothAnswer: 'fell fallen'
  },
```

Challenges in Quiz Wire

Challenge-1 in Quiz-Wire



Challenge 2 - AWS Lambda Blueprint Changed

- Tutorials, blogs, articles used the Alexa Factskill blueprint.
- It has now moved to the ‘Serverless App Repository”
- Deployment method has changed drastically

Create function

Author from scratch

Start with a simple "hello world" example.

Blueprints

Choose a preconfigured template as a starting point for your Lambda function.

Serverless Application Repository

Find and deploy serverless apps published by developers, companies, and partners on AWS.

Applications (332)

Sort by: Best Match

Search applications by name, description, or labels

1 2 3 4 5 6 7 ... 28

alexa-skills-kit-nodejs-factskill

This Alexa sample skill is a template for a basic fact skill. Provided a list of interesting facts about a topic, Alexa will select a fact at random and tell it to the user when the skill is invoked.

skills fact alexa

Alexa Skills Kit 10.7K deployments

alexa-skills-kit-nodejs-triviaskill

This Alexa sample skill is a template for a trivia style game with score keeping. Alexa will ask you a multiple choice questions and seek your response. Correct and Incorrect answers to questions are recorded.

skill trivia alexa

Alexa Skills Kit 981 deployments

SecretsManagerRDSMySQLRotationSingleUser

Conducts an AWS SecretsManager secret rotation for RDS MySQL using the single user rotation scheme

AWS Secrets Manager 970 deployments

Select blueprint
Configure triggers
Configure function
Review

Select blueprint

Blueprints are sample configurations of event sources and Lambda functions. Choose a blueprint that best aligns with your desired scenario and customize as needed, or skip this step if you want to author a Lambda function and configure an event source separately. Except where otherwise noted, blueprints are licensed under CC0.

Welcome to AWS Lambda! You can get started on creating your first Lambda function by choosing one of the blueprints below.

Select runtime | alexa | Viewing 1-7 of 7

Blank Function
Configure your function from scratch. Define the trigger and deploy your code by stepping through our wizard.
custom

alexa-skill-kit-sdk-factskill
Demonstrate a basic fact skill built with the ASK NodeJS SDK
nodejs6.10 · alexa

alexa-skill-kit-sdk-triviaskill
Demonstrate a basic trivia skill built with the ASK NodeJS SDK
nodejs6.10 · alexa

alexa-smart-home-skill-adapter
Provides the basic framework for a skill adapter for a smart home skill.
nodejs · iot · smart-home · alexa · li...

alexa-skills-kit-color-expert
Demonstrates a basic skill built with the Amazon Alexa Skills Kit.
nodejs6.10 · alexa

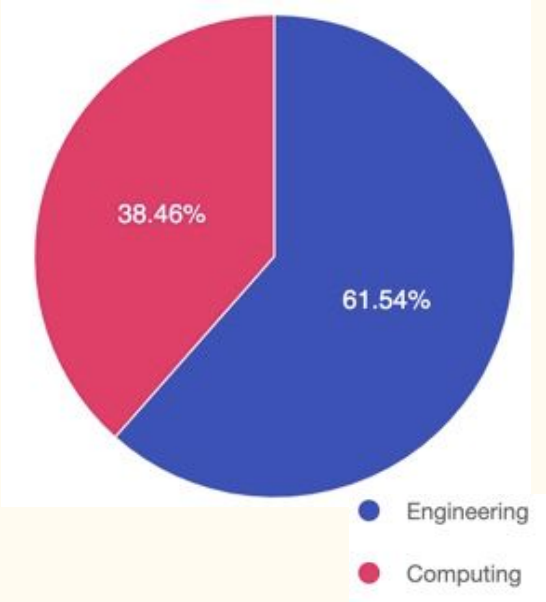
alexa-skill-kit-sdk-howtoskill
Demonstrate a basic How-to skill built with the ASK NodeJS SDK
nodejs6.10 · alexa

alexa-skills-kit-color-expert-py...
Demonstrates a basic skill built with the Amazon Alexa Skills Kit.
python2.7 · alexa

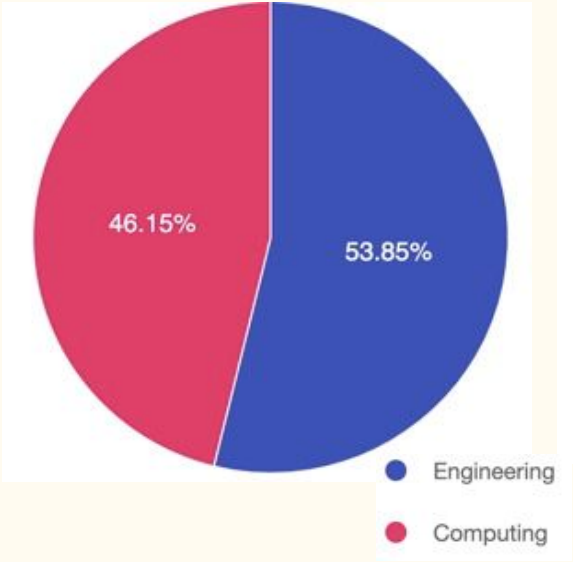
Cancel

User Study

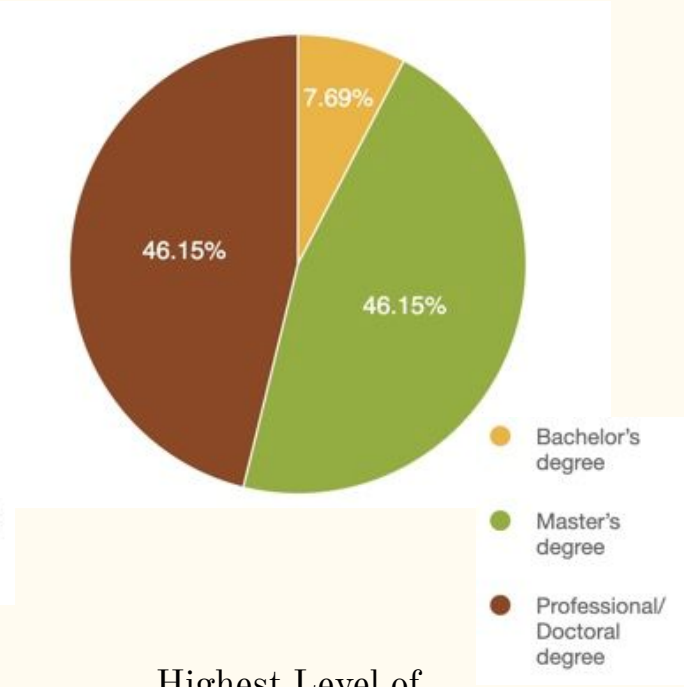
Demographic Questions



Field of Education



Industry of Occupation

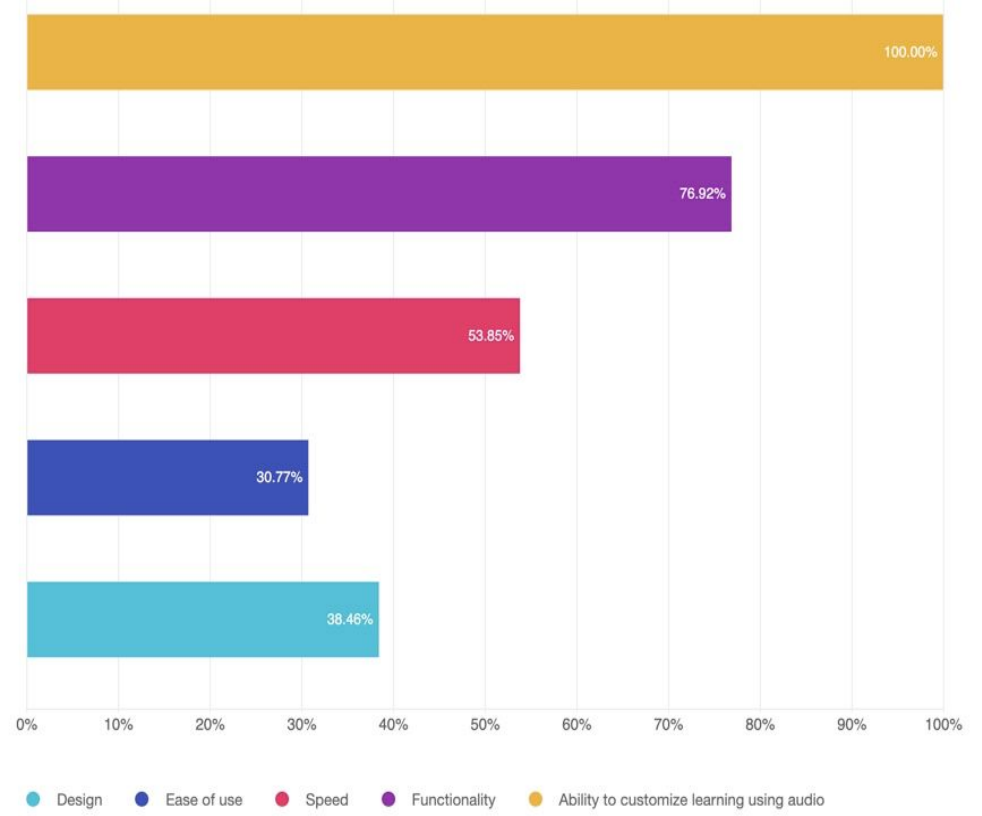


Highest Level of Education Attained

Average Ratings

Questions	Average Ratings	Out of
1. What is your overall evaluation of this app on a scale of 1-5?	4.46	5
2. On a scale of 1-5, how easy is this product to use?	3.62	5
3. On a scale of 1-5, how likely are you to recommend this app to a friend or colleague?	4.15	5
4. How satisfied are you with the look and feel of this product?	4	5

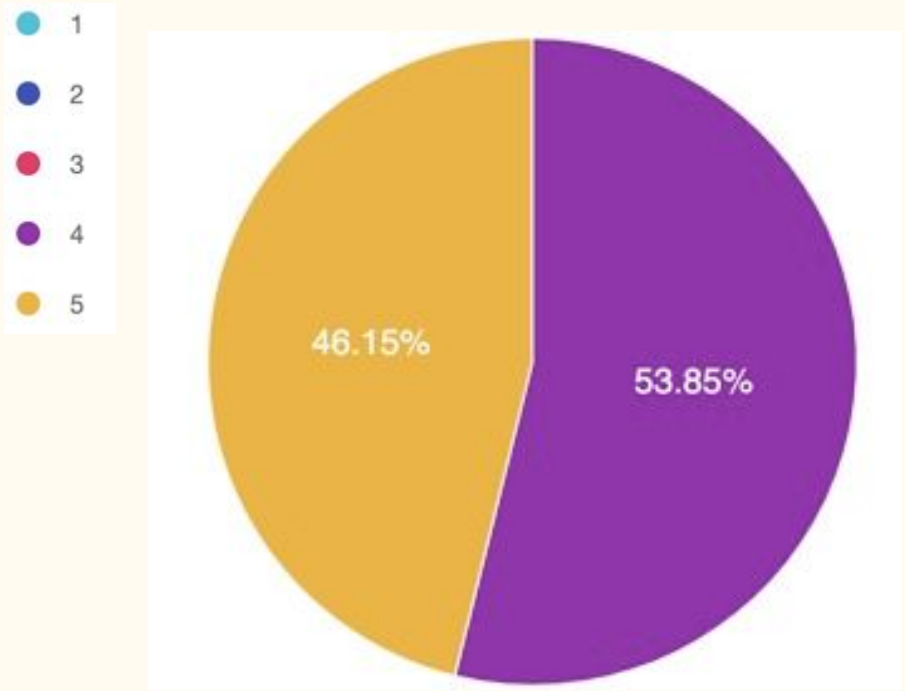
Best Liked Features



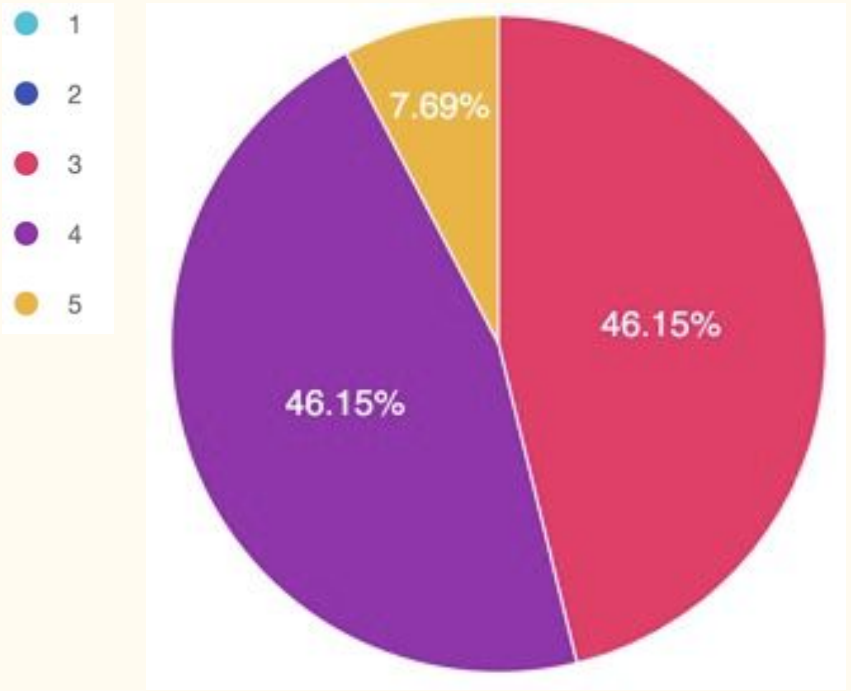
Which features do you like best about this product? Select any 3:

1. Ability to customize learning using audio
2. Functionality
3. Speed
4. Design
5. Ease of use

Evaluation of App

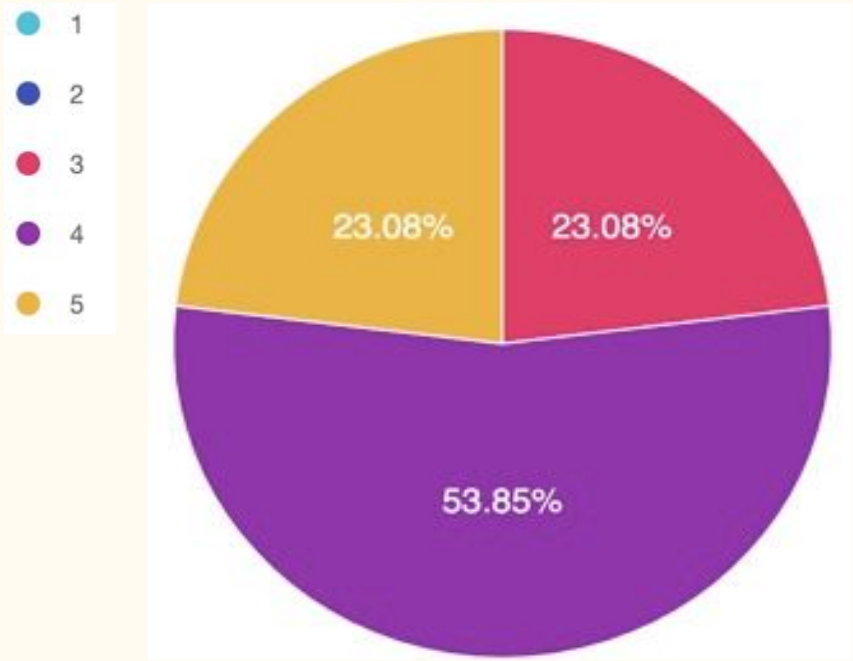


Overall Evaluation of App

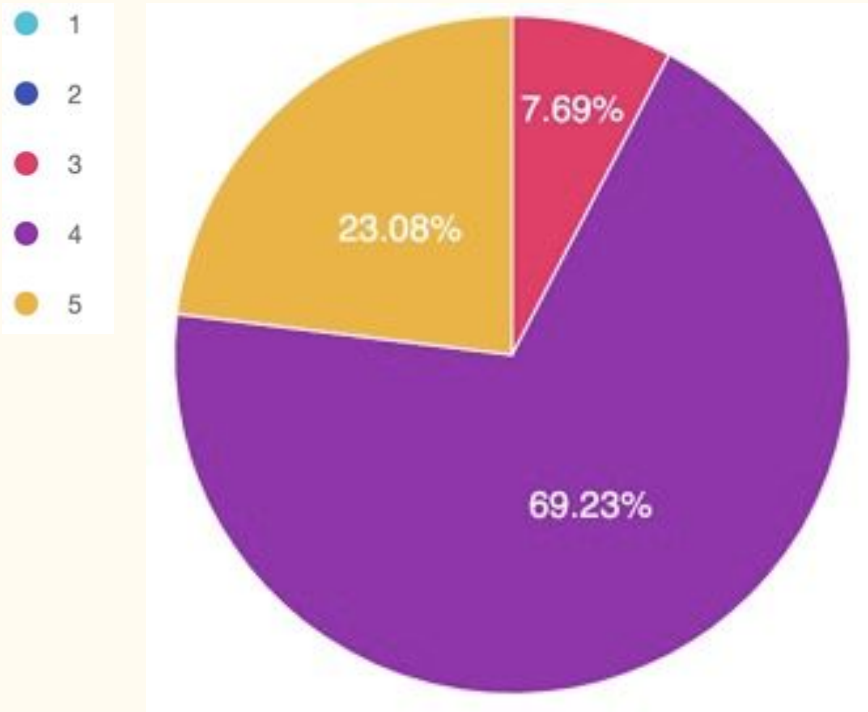


Ease of Use of App

Evaluation of App

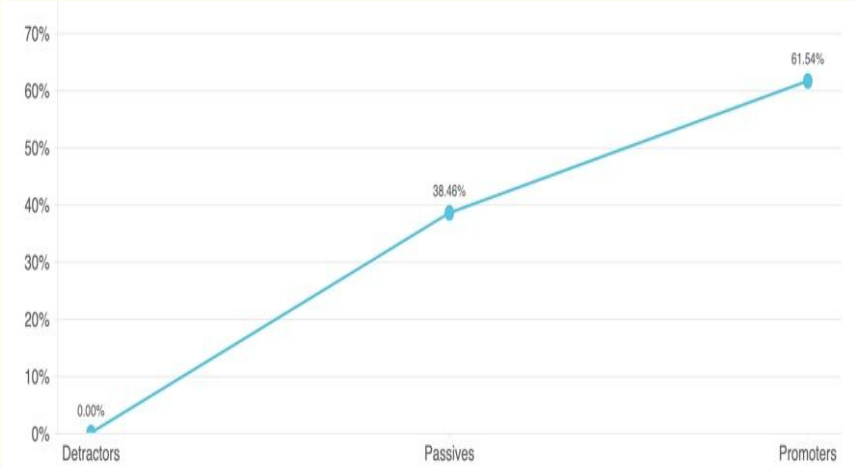


Look and Feel of Product



Likelihood of Recommending to Friend

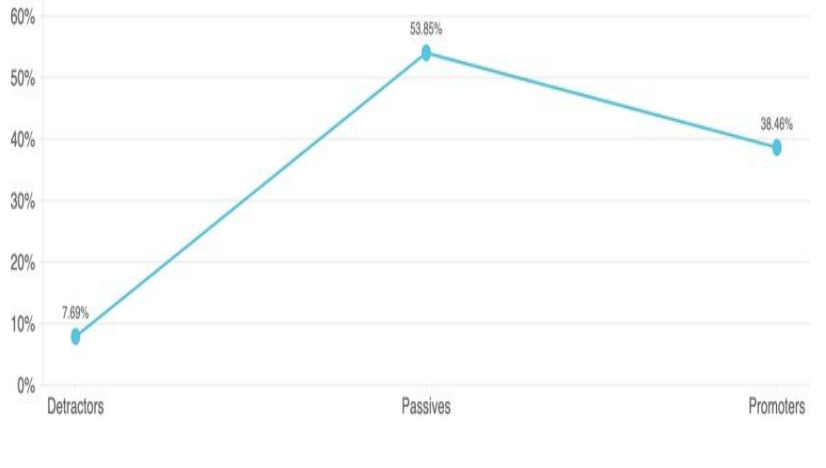
Self-Rating of Tech Savvy Level



(1) Detractors (0-6)	(2) Passives (7-8)	(3) Promoters (9-10)	Net Promoter Score
0	5	8	61.54

Range		Least frequent		Most frequent		Mean	Median	Standard deviation	Variance
From	To	Frequency	Value	Frequency	Value				
Passives	Promoters	5	Passives	8	Promoters	2.62	3	0.51	0.26

Likelihood of Reusing App on Availability



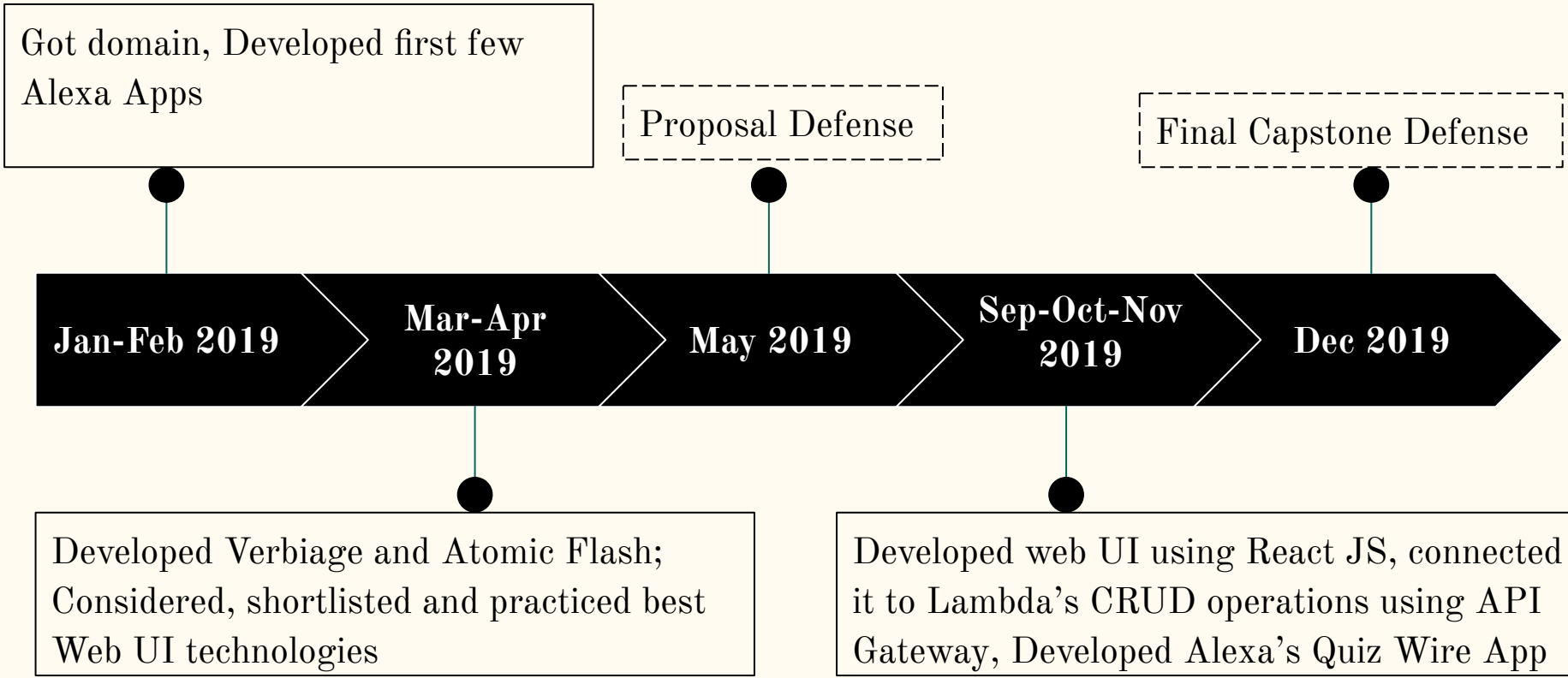
(1) Detractors (0-6)	(2) Passives (7-8)	(3) Promoters (9-10)	Net Promoter Score
1	7	5	30.77

Range		Least frequent		Most frequent		Mean	Median	Standard deviation	Variance
From	To	Frequency	Value	Frequency	Value				
Detractors	Promoters	1	Detractors	7	Passives	2.31	2	0.63	0.4

Next Steps

1. Improvise the website’s user-interface and HCI component in such a way that it explains the usage instructions better. The design of the UI can be made more visually appealing too.
2. Improvise the Voice UI to make it more conversational. This can be done by making the flashcards more interactive. Removing the ‘number’ slot and finding a better solution to the slots challenge would be a good solution.
3. Deploy the final application developed.

Timeline


Got domain, Developed first few Alexa Apps
Proposal Defense
Final Capstone Defense
Jan-Feb 2019
Mar-Apr 2019
May 2019
Sep-Oct-Nov 2019
Dec 2019
Developed Verbiage and Atomic Flash; Considered, shortlisted and practiced best Web UI technologies
Developed web UI using React JS, connected it to Lambda's CRUD operations using API Gateway, Developed Alexa's Quiz Wire App

Thank you :)
Question?