





Cherokee Project

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Yatish Dubasi, Tuan Nguyen



Who

→ Carter Buckner

- ◆ Senior Computer Science
- ◆ STEM Education
- ◆ Health Research
- ◆ Aerospace

→ Hong Phuc Vo

- ◆ Senior Computer Science
- ◆ PyGame
- ◆ Website Development

→ Watson Dunn

- ◆ Senior Computer Science
- ◆ Interned with Murphy USA
- ◆ Industry Database Management
- ◆ Software Development

→ Yatish Dubasi

- ◆ Senior Computer Science
- ◆ Image Recognition
- ◆ Color Detection AI

→ Schon Duncan

- ◆ Tahlequah Cherokee Teacher

→ Tyler Spreen

- ◆ Senior Computer Science
- ◆ Android Apps
- ◆ Microsoft Azure
- ◆ Google Firebase

→ Tuan Nguyen

- ◆ Senior Computer Science
- ◆ Machine Learning
- ◆ Artificial Intelligence

Why

Problem: Endangered Language

- Only 12,000 native speakers out of 300,000 tribal members

Cherokee ties deeply with historical and cultural values. Facing extinction means a large part of Native American culture and history will be lost.

Popular language learning tools tend to overlook Cherokee and its many dialects.

However, Cherokee language keyboards are readily available.

Our project aims to provide a fun and engaging way to practice conversational Cherokee.

What

- **General Overview:**

- Cherokee language learning tool
- Cross-platform mobile application
- Story-based feature to detect weaknesses
- Flash card feature to address weaknesses
- Emphasis on conversational learning
- Western dialect of Cherokee

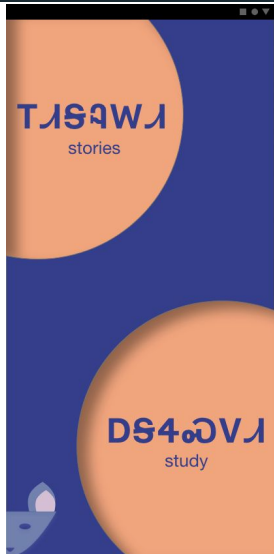
- **Implementation Overview:**

- Firebase platform
- Cloud Firestore database
- Flutter UI
- Unity engine

How

- Caters to teachers and students
- Easy and exciting to use
- 2 use cases
- Invoke 'story-like' elements (i.e. textures, colors)
- Cross platform
 - Firebase ML
 - Firestore
 - Unity
 - Flutter



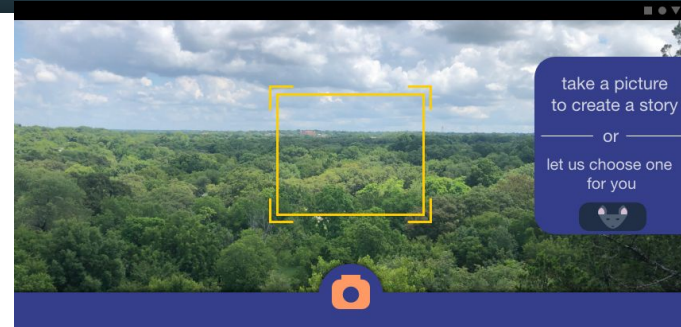


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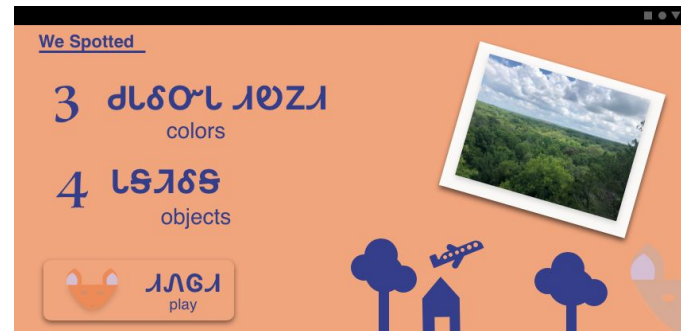


2

3a



3b



3c



Sample app screens

When

Tasks	Dates
1. Gain background about story-telling techniques utilized in games and by Cherokee people	1/10/2021 - 1/17/2021
2. Develop the initial UI after first launching the app	1/10/2021 - 1/17/2021
3. Implement camera functionality to take pictures	1/17/2021 - 1/24/2021
4. Implement object/color detection on the photos taken	1/24/2021 - 1/31/2021
5. Testing 1: test proper functionality of camera usage and object/color detection	1/24/2021 - 1/31/2021
6. Create stories, questions, and answer options	1/31/2021 - 2/7/2021
7. Implement and integrate Firebase (will store the stories used by the app) into the app	2/7/2021 - 2/10/2021
8. Implement functionality to search Firebase for matching labels to retrieve story information	2/10/2021 - 2/17/2021
9. Testing 2: test proper functionality of Firebase as well as the retrieval implementation	2/10/2021 - 2/17/2021
10. Develop initial story game UI when the story is first started	2/17/2021 - 2/21/2021
11. Develop question and answer UI for when questions (part of the game) are asked to the user	2/21/2021 - 2/28/2021
12. Implement answer validation to check whether a user's answer is correct or incorrect	2/28/2021 - 3/7/2021
13. Testing 3: test proper functionality of the question and answering implementation	2/28/2021 - 3/7/2021
14. Implement user level/progress functionality, for example users gaining level after answering a certain amount of questions correctly	3/7/2021 - 3/21/2021
15. Testing 4: test proper functionality of user progress	3/7/2021 - 3/28/2021