Statement of Work

Project Name: Coding Application development
Client Name: Tahlia Harris
Service Provider: 24-S2-2-C EduKATE
Date: 17/7/24
Version: 1.0
Team members:

- Yi Wang: u7776204
- Siyi Liu: u7619315
- Dong-Jhang Wu: u7775048
- Rifang Zhou: u7780442
- Finn McClusky: u7304874
- Wendi SHi: u7773637
- Wenjing Qi: u7727187

Project Overview

EduKATE Innovations is dedicated to bridging the gender gap in STEM education by developing engaging, educational toys for young girls. The company's first product, a programmable robotic dog, is in the final stages of development. This project involves the development of an app that teaches coding through interactive play and game-like lessons.

Client Vision and Goals

EduKATE Innovations was founded with the mission to inspire and empower young girls in STEM fields through innovative educational products. Our goal is to make STEM education accessible and fun, encouraging young girls to explore coding and robotics from an early age. Our first product, a programmable robotic dog, is designed to engage and educate our audience, setting the foundation for future products like Kate-E the coding doll.

Project Objectives

The client aims to develop an app to teach coding by letting users control a programmable robot dog by coding on this app. The app will offer **three different coding languages** to cater to different levels of experience and learning needs.

Three coding methods:

- **Picture Block Coding**:

Ideal for beginners, this visual language uses images to represent coding concepts. Users can create coding logic by dragging and dropping graphical blocks, which helps them understand basic coding principles.

- **Word Block Coding**:
  A step up from picture blocks, this method uses words and phrases to introduce coding syntax. Users create more complex coding logic by combining blocks with text labels, facilitating a transition to text-based coding.
- **Text Coding**:
  For advanced users, this method involves typing out code, providing a more traditional coding experience. Users can write and run code, learning advanced coding skills and gaining experience in a real coding environment.

And this app needs to have an **account management system** to protect user details. The main functions will be to track users' progress through lessons and allow them to save their code.

And the following additional features will be considered after the above:

- **Hardware Software Integration:**
  Ensuring seamless integration between the hardware (robotic dog) and the software (app). This integration will enable users to effectively control and operate the robotic dog using the app.
- **Code Translations:**
  Implementing an integration between the three programming languages offered in the app. This feature will allow the code produced by the user in one language to be translated into the next more complex language, helping users see their progress and understand the relationship between different coding methods (for example the picture block language to the word block language).
- **Lessons:**
  Developing a series of interactive coding lessons that guide children through the coding languages. These lessons will be structured in a way similar to Duolingo, starting from very simple concepts (like understanding decimals) and progressing to more complex topics (such as using libraries)

Project Milestones

Milestone	Description	Expected date
1. App framework	Initial structure	week4
2. Basic app demo	First functional prototype	week6
3. Blocking language	Visual coding blocks	week10

(picture block)		

Schedule and Deliverables

Task	Deliverables	Expected date
Forming a group and brief discuss about project	Client requirement pdf	Week 1-2
Fimiliar develpement frame work	Initial design of frame work	Week 3
Fimiliar with React	Initial framework of the software	Week 4
Functional app prototype	Demo of downloaded app	Week 5-6
Picture blocking language	Demo of picture block game	Week 7-10

Technical and Other Constraints

1. **Purpose and target user group:** The software should be designed specifically for young girls, combining visual appeal and appropriateness, while providing structured and progressive programming teaching content to facilitate the learning process and stimulate interest in the STEM field.
2. **Security:** Due to the involvement of user account management, software needs to ensure the security and confidentiality of user data.
3. **Cross platform compatibility:** The software may need to run on different operating systems, such as Windows, macOS, and Linux.
4. **User interface design:** The UI/UX design of software needs to attract the target user group while providing an intuitive and easy-to-use interface.
5. **Maintainability:** Software needs to be easy to maintain.
6. **Budget constraints:** Projects may be constrained by budget and time frames, which may affect the development process and the functionality of the final product.
7. **Third party service and API dependencies:** If your software relies on external services or APIs, please consider the availability, stability, and cost of these services.

Resources, Risks, and Potential Costs

Resources

- React: The project will be built using the React JavaScript library for building user interfaces. The development team will leverage React's components, state management, and other features to create the interactive educational app.
- GitHub: The project's codebase will be hosted and version-controlled on GitHub, allowing for collaborative development, issue tracking, and code reviews.

Risks

- Unfamiliar Technology: The development team may face a learning curve in working with React and other technologies required for the project, which could lead to delays.
    - Risk Owner: Project team, Client
    - Mitigation: Project team finds training and resources for the project to get up to speed with React and related technologies.

Potential Costs

Cost Item	Description	Amount	Responsible Party
Software Licenses	Licenses for any third-party tools or libraries used in development	200 $	Project Team and EduKATE Innovations
Design Services and app development	UX/UI design work for the app's interface and function	100 $	Project Team

Stakeholder Analysis

Stakeholder Identification

- Client: Expects an app to provide a stimulating educational experience that empowers young girls to participate with STEM through a series of interactive lessons and games, and the app could connect with a robotic dog to enable programming implementation. This app should support multiple coding assistants, ranging from basic picture block coding for beginners to more advanced text coding, and finally

could use python directly, ensuring a gradual and accessible learning curve for young users.

- Team members: Expect to focus on deepening understanding of complete project execution. Aim to enhance the skills across various stages of software development, from initial framework design to implementation and testing. Through the whole project, members could train their technical abilities and enrich professional experience, preparing for future challenges about their careers.
- End user: Parents and kids are the last consumers. Parents want a product that is safe, affordable, easy to use, instructive, and from a reputable company. Kids want the product to be engaging, interactive, and able to help them feel like they've made progress with their coding abilities over time. The product should have a user-friendly interface, extensive user assistance, and learning materials that are gradually directed in order to satisfy these demands.

Team Member Signature

1. Siyi Liu
2. Yi Wang
3. Dong-Jhang, Wu
4. Wenjing Qi
5. Wenhui Shi
6. Finn McClusky
7. Rifang Zhou

Client Approval

Client Signature: Tahlia Harris
Date: 04/08/24