Sprint Planning Document (Sprint 1)

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Olivia Monteiro, Alicia Reed, Danny Steuer, Archer Taylor, Eli Weber

High-level Project Overview

Project Mission:

- Provide a client-server architecture to develop educational systems to support STEM interest in K-12 students

Problems We Are Solving:

- There is limited previous work in the field of quadruped research in K-12 students
- Development of interesting, child-friendly educational resources
- Develop STEM interest in young students

Project Overview (High-Level Features):

- **Cloud Server**
  - Cloud connection to link the microphone & voice files with the PuppyPi
  - Support for quadruped control, sending and receiving commands, sending and receiving sensor data
- **Voice Recognition Using LLM**
  - Using a large language model to recognize & process voice data into words to transmit as commands to PuppyPi
- **ROS Programming**
  - Using action groups to take the PuppyPi through a series of preprogrammed motions
    - Sit, lay down, moonwalk, shake

Sprint 1 Planning

Sprint 1 Goals:

1. **Research tools to be used in this project**
2. **Connect PuppyPi to WiFi**
3. **Create API**
4. **Create cloud transcription service**
5. **Reverse engineer PuppyPi app**
6. **Programming PuppyPi with ROS**

Sprint 1 Deliverables:

- **Research tools to be used in this project**
  - **Assigned:** All team members
  - Read PuppyPi, docker, ROS documentation and familiarize
- **Connect PuppyPi to WiFi**
  - **Assigned:** Archer Taylor, Eli Weber, Olivia Monteiro
  - Change PuppyPi from AP mode to LAN mode
- **Create API**
  - **Assigned:** Archer Taylor, Danny Steuer
  - Rest API for PuppyPi to interface with the cloud services
- **Create cloud transcription service**
  - **Assigned:** Archer Taylor, Danny Steuer
  - AWS Service to process voice data
- **Reverse engineer PuppyPi app**
  - **Assigned:** Alicia Reed
  - Look at app provided by HiWonder and see if there is anything helpful in the code for our project
- **Programming PuppyPi with ROS**
  - **Assigned:** Eli Weber, Olivia Monteiro
  - Dig into the already existing code and figure out how to run it through VNC
  - Bypass Docker/VIM constraints and run edited code
  - Freely program PuppyPi with walking & action groups