**Weekly Progress Report**

**Week 9**

**Background**

This marks the first official week of hands-on work on our humanoid robot project. Before diving in, we held two brainstorming online meetings on **25/11** and **26/11** to discuss the project's scope, potential applications, and initial implementation strategies.

**Highlights of the Brainstorming Meetings**

* Explored diverse functionalities the humanoid robot could provide, including:
  + **Measuring human temperature** for health monitoring.
  + **Home security** applications to enhance safety.
  + **Obstacle avoidance** to ensure children's safety.
* Debated mechanical design options:
  + **Complete legs** for a more humanoid format and movement capabilities.
  + **Wheeled design** for simpler implementation and improved stability.
  + The decision remains under discussion, reflecting the diverse perspectives within the team.

**This Week’s Progress**

1. **ESP32 Setup and Integration**
   * Acquired the ESP32 module, the backbone of our robot’s functionality.
   * Successfully configured it to interact with other components.
2. **Face Detection Development**
   * Initial challenges with the camera were resolved through trial and error. The face detection feature is now operational and integrated with the system.
3. **Voice Recognition Feature**
   * Achieved smooth functionality for voice recognition. The system allows easy recording via a mobile phone mic, demonstrating high responsiveness.
4. **Mobile App Connection**
   * Integrated the ESP32 with a mobile application, enabling streamlined control and testing of features.

**Challenges Encountered**

* **Simultaneous Feature Operation**:
  + The system currently struggles to run face detection and voice recognition at the same time. This issue is our primary focus moving forward, as we aim to optimize concurrent processing.

**What’s Next**

* Conduct research and tests to enable simultaneous operation of face detection and voice recognition.
* Finalize the mechanical design after further discussions and evaluations.
* Continue refining the existing features for greater efficiency and user experience.