PLATAFORMA VESTÍVEL PARA AVALIAÇÃO DA CINEMÁTICA DO JOELHO UTILIZANDO SENSORES INERCIAIS

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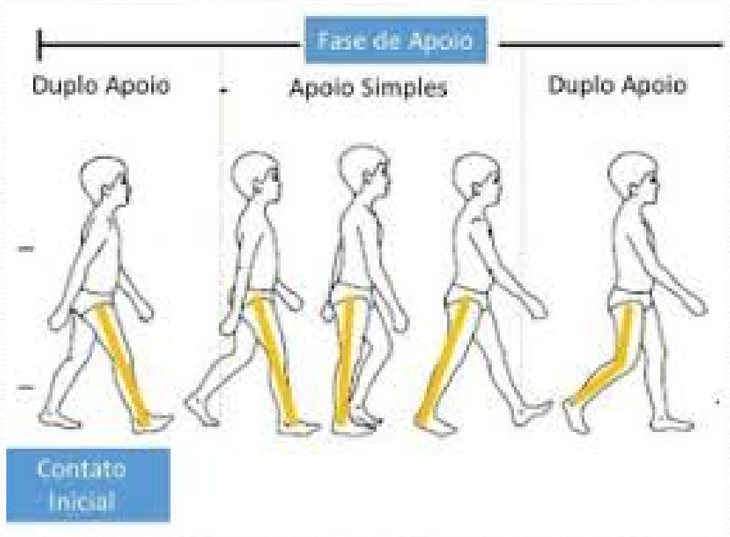
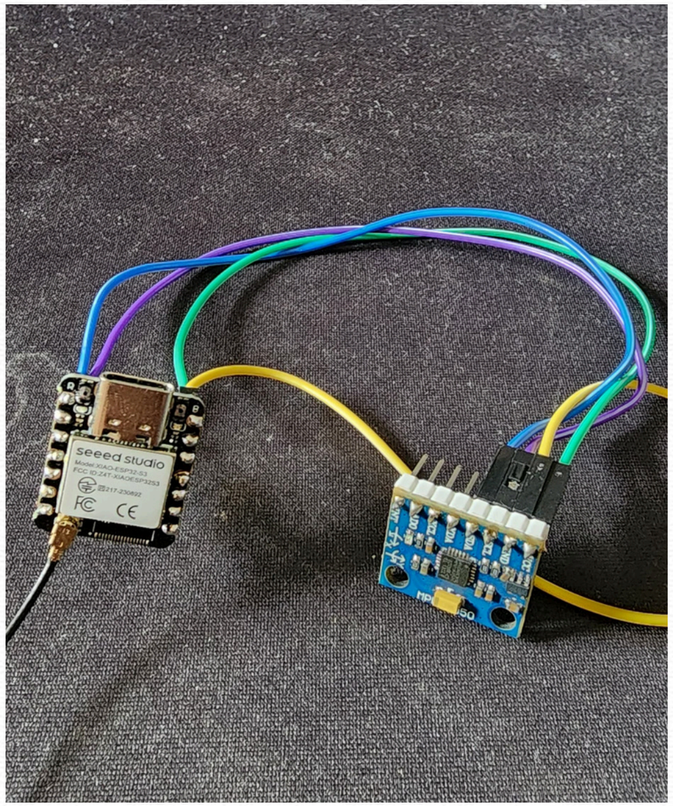
Metodologia

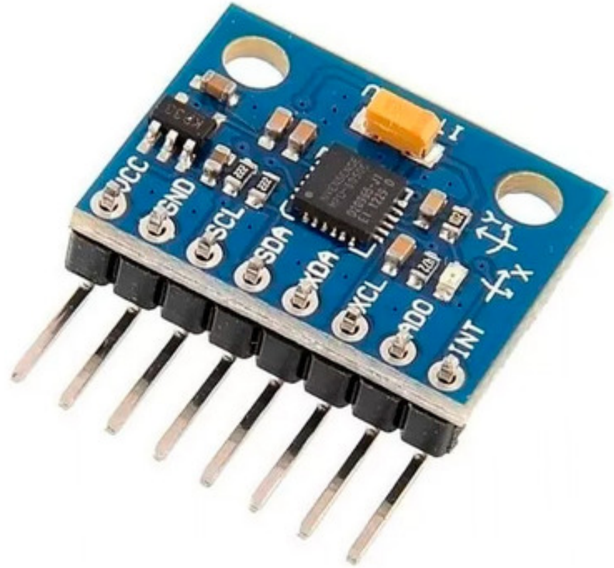




Ferramentas utilizadas

- **Sensor Inercial (MPU - 6050)**: combinam acelerômetro e giroscópio, medem movimentos nos três eixos espaciais (X, Y, Z).

- **ESP32 S3:** microcontrolador que inclui Wi-fi e Bluetooth Low Energy (BLE).



Ferramentas utilizadas

- **Flutter:** framework que auxilia no desenvolvimento de apps.

- **Firebase Realtime Database:** é um serviço de banco de dados em tempo real baseado na nuvem.

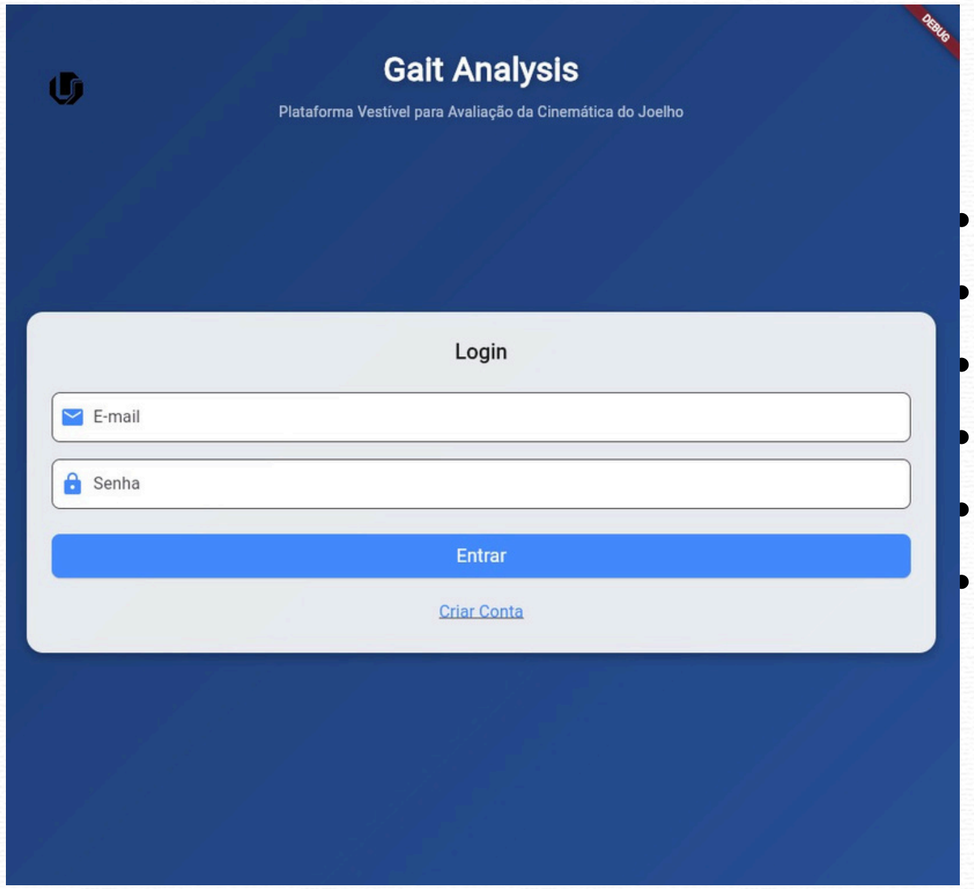
- **Firebase Authentication:** é um serviço de autenticação do Firebase que permite a segurança de dados.

Desenvolvimento do Firmware

- Plataforma
  - Aquisição de Dados ⟶ I2C
- Cálculo da Cinemática
  - Filtro Kalman ⟶ Roll, Pitch e redução de ruído
- Transmissão via Bluetooth

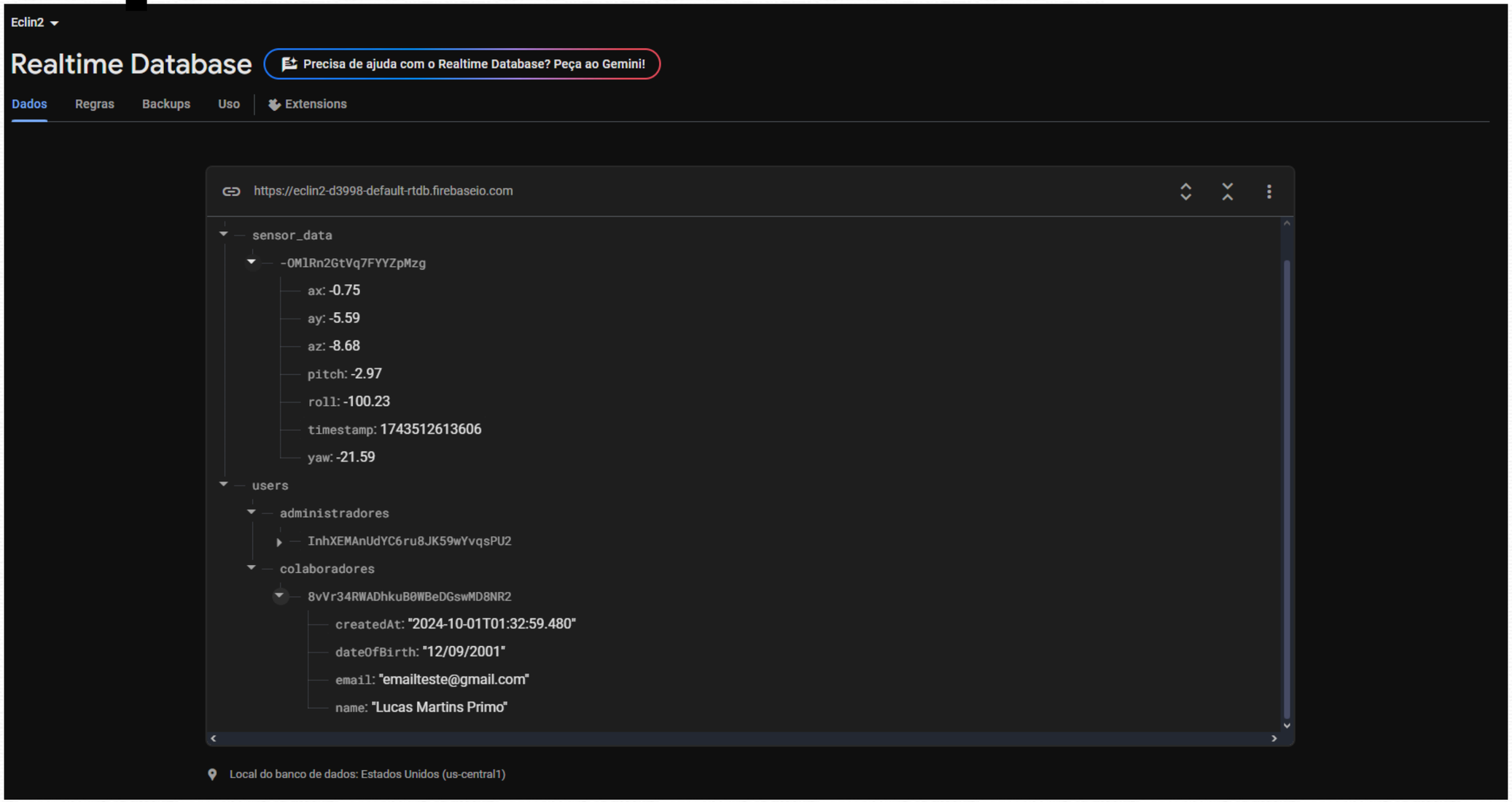
Desenvolvimento do Aplicativo

Flutter

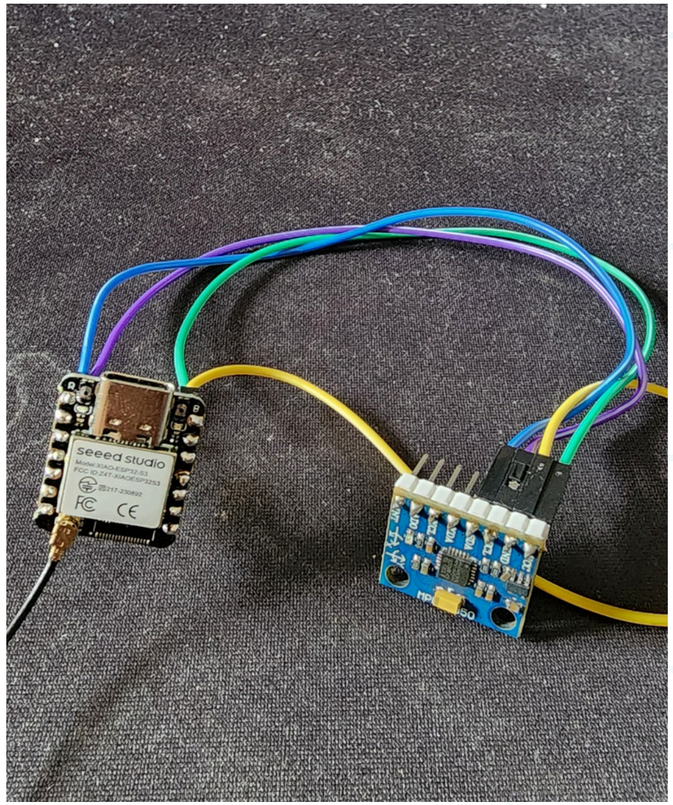


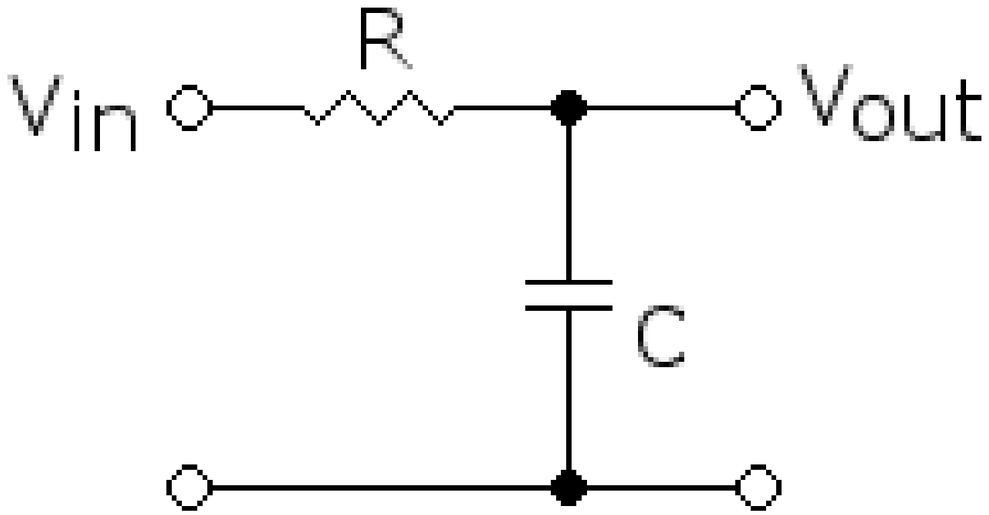
Desenvolvimento do Aplicativo

Firebase



Próximos passos...





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