# 1. Generate a List of Materials

Consider what sensors, motors or HATs you will need *in an ideal scenario* for your final project. Create a table outlining the materials including price and a link to the item. You can find items on Sparkfun or Adafruit. We will try to accommodate some requests, given our budget

Example:

| Item | Price Per Unit | Link |
|---|---|---|
| Raspberry Pi Sense HAT - any Raspberry Pi with 2x20 Connector | $30 | https://www.adafruit.com/product/2738?src=raspberrypi |
| Waterproof 1-Wire DS18B20 Digital temperature sensor | $9.95 | https://www.adafruit.com/product/381 |
| FSR (Force Sensitive Resistors) | $4.95 | https://www.adafruit.com/product/5475 |

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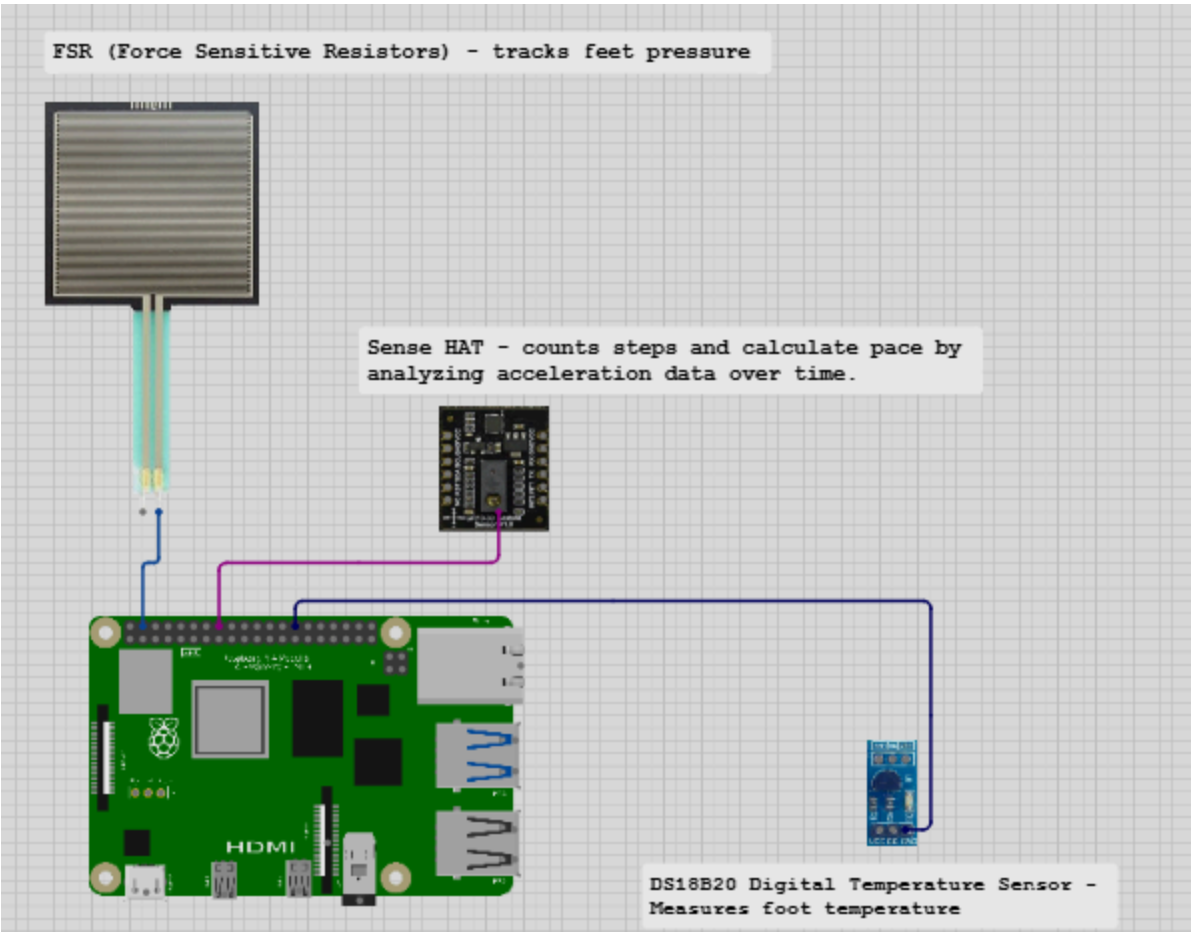
# 2. Document the Circuit

Use cirkitdesigner.com to finish the documentation of your circuit for your final project. This should include

- The sensors, motors, and HATs in an ideal scenario
- A description of each item, and it's role in your circuit




## 3. Stepper Motor Hello World Extension

Build on the in-class Stepper Motor Hello World assignment by integrating the stepper motor with a messaging protocol such as MQTT, an API, or OSC. Your goal is to trigger motor movement based on an external event. Use conditional logic to listen for a specific message or event, and activate the motor only when that condition is met.

For example:

- Turn the motor when a specific MQTT topic receives a message.
- Trigger motion when a REST API endpoint is called.
- Use OSC to listen for a signal from another device or software.

In the README, provide a brief explanation documenting how your messaging logic works and how it connects to motor control.

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# 4. Submission

Submit your work by pushing the documentation to a GitHub repository. Your repository should include:

- **List of materials:** In markdown format.
- **Circuit Documentation:** An image of the circuit
- **Stepper mMotor Hello World Extension:** Provide code and a description in the README

Provide the GitHub link to your repo for evaluation.