

Determine Short or Long

User Story

As an app user, I want the server to determine whether the incoming message is long or short.

Rational

It is important to ensure that short and long motions are accurately distinguishable so that input Morse code sequences are correctly interpreted.

Test Setup

To test this implementation, 2 packages are required:

- Mocha
- Chai

To install these packages, use the command:

```
npm install mocha chai
```

To run the unit test, use the command:

```
mocha testShortnLong.js
```

Test Procedure

Inputs: The time in milliseconds of when motion is detected and the time in milliseconds of when motion has ended.

Test cases:

- A short motion (the sequence 'se') will be determined when a motion less than 3 dit lengths is detected.
- A long motion (the sequence 'ste') will be determined when a motion of exactly 3 dit lengths is detected.
- A long motion (the sequence 'ste') will be determined when a motion longer than 3 dit lengths is detected.

Interpreting Motion Data

User Story

As an app user, I want to decode the motion sensor messages to be decoded into English letters based on Morse code coding table.

Rational

The core functionality of the application is to interpret the motions detected and output its corresponding letter or discard the sequence if it does not match anything in the Morse code coding table.

Test Setup

To test this implementation, 2 packages are required:

- Mocha
- Chai

To install these packages, use the command:

```
npm install mocha chai
```

To run the unit test, use the command:

```
mocha englishLetter.js
```

Test Procedure

Inputs: A string made up of 1's and 0's, where 1's represent a long motion and 0's represent a short motion.

Test Cases:

- A sequence of motions that are within the Morse code coding table which will output the corresponding letter.
- A sequence of motions that are within the Morse code coding table which will not output a different letter than its corresponding letter
- A sequence of motions that are not within the Morse code coding table which will output "" to represent a junk sequence.
- No detection of motion for 3 seconds to indicate the end of the Morse code sequence will output start evaluating the sequence of motions since last time this happened.
- No detection of motion for 7 seconds to indicate a space between words will output " _".