Code Flow Chart:

Arduino Measurements

Start → Get LIS3DH accelerometer measurement → Bluefruit LE UART → Acceleration measurements

Bluetooth Reception

Connect RPi to Bluefruit UART Adapter → Read Characteristic → Filter read data for acceleration measurements → Disconnect or Broken Pipe

Acceleration and time measuremetns

Motor Control

Start → Initialize motors and pendulum → Adjust pendulum to desired length and frequency → Compute current pendulum frequency → Adjust motor driving frequency → Keyboard Interrupt → End

User Input

Desired length or frequency

Check for user input → Interpret user input as a pendulum length or frequency → Invalid input → Tell user this input is invalid