Function name:

Inputs:

Outputs:

Algorithm:

| Function name: readAccelerometer  Inputs: none  Outputs: array of acceleration values in x, y, and z  Algorithm:  Read the microbit accelerometer in x and store the value  Read the microbit accelerometer in y and store the value  Read the microbit accelerometer in z and store the value  Return an array of these three values |
| --- |
| Function name: calculateAccelerationMagnitude  Inputs: array of acceleration values  Outputs: magnitude of acceleration  Algorithm:  This stores the magnitude of acceleration values in x, y, and z in variables  Then it calculates the magnitude using the 3D pythagorean theorem |
| Function name: scaleAccelerometerToMetersAndSeconds  Inputs: acceleration value  Outputs: acceleration value converted to meters per second squared  Algorithm:  The sensor gives a value between -1023 and 1023  Acceleration is measured in meters per second square.  The map command uses a linear function to convert a sensor value (-1023 to 1023) to be between -9.81 and 9.81 meters per second.  This scaled value is returned. |
| Function name: isAccelerationMoreThanIsAllowed  Inputs: acceleration magnitude  Outputs: true or false (is acceleration more than a maximum amount or not)  Algorithm:  If-then statement comparing the input acceleration to the maximum allowed acceleration |
| Function name: displayAccelerationFeedback  Inputs: true/false whether acceleration is beyond maximum  Outputs: none  Algorithm:  if/then statement that either shows positive feedback or negative feedback |
| Function name: showPositiveFeedback  Inputs: none  Outputs: none  Algorithm:  Show a happy face on the LED display |
| Function name: showNegativeFeedback  Inputs: none  Outputs: none  Algorithm:  Show a sad face on the LED display |