How to use the GarysPosture App

This app measures your upper body position using the phones in-built accelerometer. If you lean forward or backward beyond a user selectable angle for more than a user set time, the app will trigger a vibration pattern indicating you are leaning forward (dot-dot-dot) or backward (dash-dash)..

When the app opens you are presented with a message about the calibration value which will be 0.0 the first time you use it and a screen with several buttons, Start, Stop and Graph.

The idea is that you will carry the phone on your shirt pocket so that it does not move around too much in normal use. The app uses the phones accelerometer to determine its angle so we don’t want the phone flopping about.

Since we want to detect when you lean forward or back from your desired vertical position, we need to calibrate the phone so it knows what position it is in when you are vertical.

On the phone tap the menu key (this is what you would tap to get to options or settings in any other app) and tap Calibrate.

There is a bit of a blurb about what to do, essentially you need to load the phone into your pocket exactly as you will when you are using the app to monitor your posture. Before you put it in your pocket you need to tap the Calibrate button. You have about 2 seconds to place it in your pocket. You will feel it vibrate, this means calibration has started. Stand in the desired upright position until you feel the phone vibrate again (about 5 seconds later).

You will be returned to the main screen ready to go. The value is saved so you don’t need to re-calibrate unless you what to place the phone in a different orientation in your pocket or you the phone is otherwise not in the same position it was when you first calibrated it.

Now you might want to play with the other settings. Open the menu/preferences again (Depending on the version of Android this might be a fixed touch key or soft key) and tap Settings.

Here you can:

* Set the Threshold for when the vibration is triggered for each direction (these are just numbers with no particular meaning except larger means you can lean further before vibration is triggered.)
* Disable/enable the vibrate function for forward or backward
* Updates Interval. You can select how often your posture is checked. The position is measured approximately every 500ms. A moving average smooths these measurements out somewhat and along with this update interval attempts reduce/eliminate any false alarms. If you set the update interval to 2 seconds. The update interval limits how often you can be alerted, so if you select 5 seconds you will only be alerted every 5 seconds if you have exceeded your threshold and remain beyond your threshold.
* Keep Screen On. Unfortunately, some phones turn the accelerometer off when the screen turns off. If this box is checked your screen will remain on for as long as you are monitoring your posture.

# How it works

GarysPosture App uses the phones in-built accelerometer to detect if the phone is tilted at an angle greater than a user pre-set angle from a user calibrated vertical position.

The user is alerted to this tilt by the phones in-built vibrator.

The phone is carried in your shirt pocket so that it moves as you do. It is important that the phone fits snugly in the pocket so that the sensitivity to tilting can be maximised.

The accelerometer is sampled approximately every 500ms and then a moving average is applied to the raw value to smooth out short term deviations to reduce false alarms.

A user set update interval determines how frequently the user is alerted to bad posture.

# Installation

As this app is not available on the Google Play store you will need to install this app on your phone using a method known as side loading. You will need to have an SDCard installed in your phone or the phone needs to emulate an external card if it does not have an SDCard slot.

Connect your phone to your computer via its USB cable and enable USB Storage mode to allow you to save the apk file to your phone.

Copy the apk file over to the phone, taking note of the directory you copy it to on the phone.

Disconnect the phone from the USB cable.

Open your phones file manage and navigate to the directory you copied the apk file to.

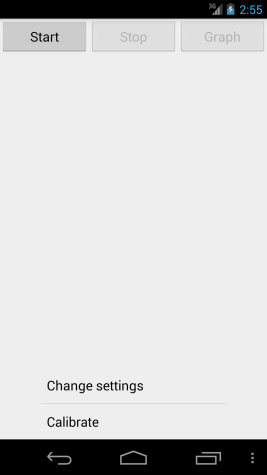
Tap the apk file and your phone should install the application. It will now show up in your apps and you can place it on one of your home screens.

# Initial Setup

The first time you use the app you will need to calibrate the vertical position. First of all practice putting the phone into your shirt pocket in the way that you intend to use it to monitor your posture. Pay attention to the orientation and which direction you have the screen facing.

Now open the app.

At the home screen open the Preferences/Setting Menu as you normally would and select Calibrate



# Operation