Study of the Android Camera2 API
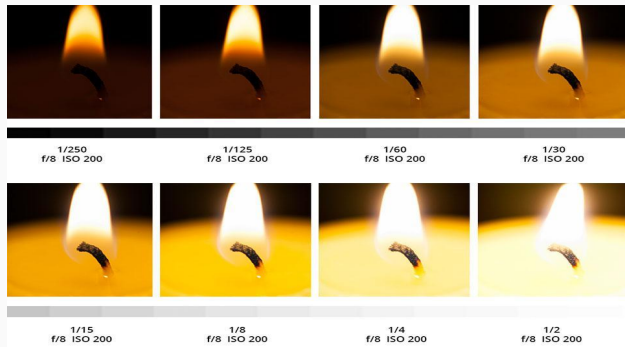
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Motivation

Smartphone cameras have a huge potential to be used as simple to-use devices for scientific data acquisition and processing, such as behavior analysis of insects.

For the purposes of this research project, I attempted to analyze how to use the Camera of smartphones running Android.
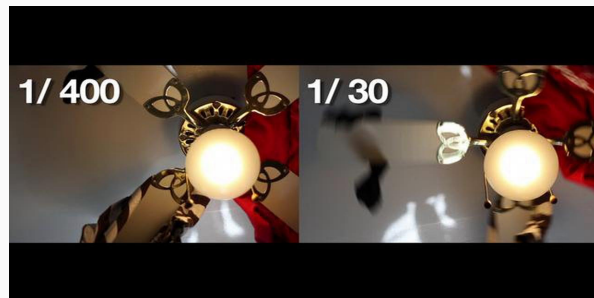
Why Camera2 API?

Exposure/ISO

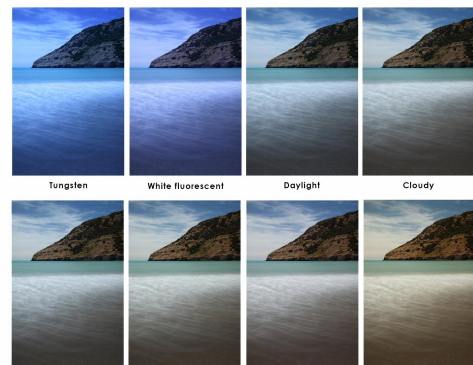http://www.bhphotovideo.com/explora/photography/tips-and-solutions/understanding-shutter-speed

HDR+

http://www.alphr.com/google/google-nexus-5/3856/nexus-5-pictures

Shutter speed

https://vimeo.com/blog/post/frame-rate-vs-shutter-speed-setting-the-record-str

White Balance

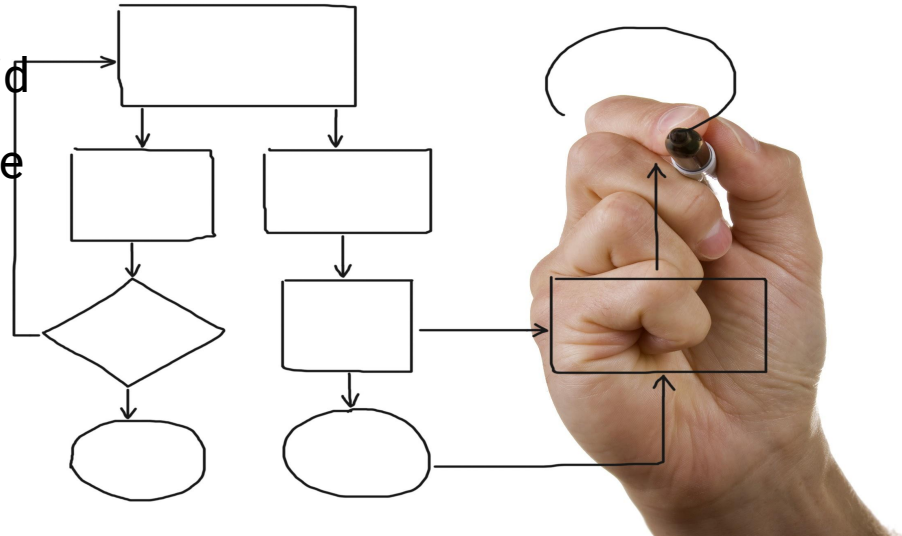https://inaburraphotogroup.wordpress.com/2012/08/19/understanding-white-balance/
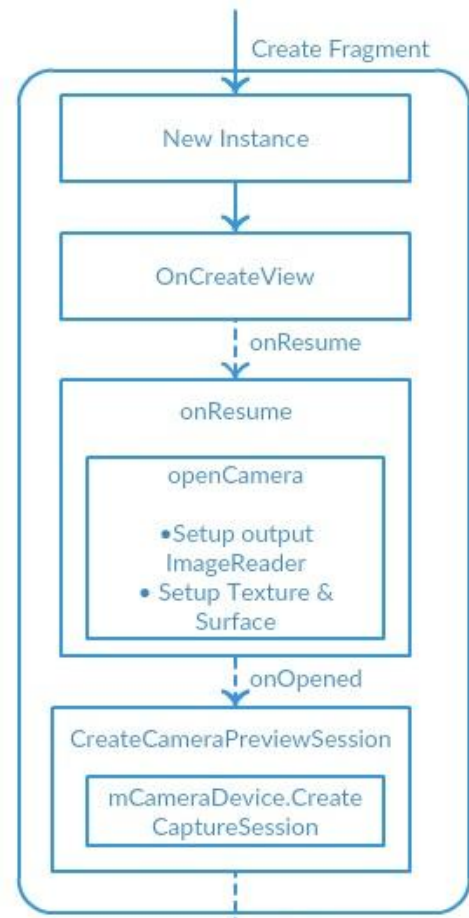
The work

The ***Camera2Basic*** code was analyzed to describe the functionality of the Android Camera2 Application Program Interface (API).

The analysis was done using the Android Studio software application.

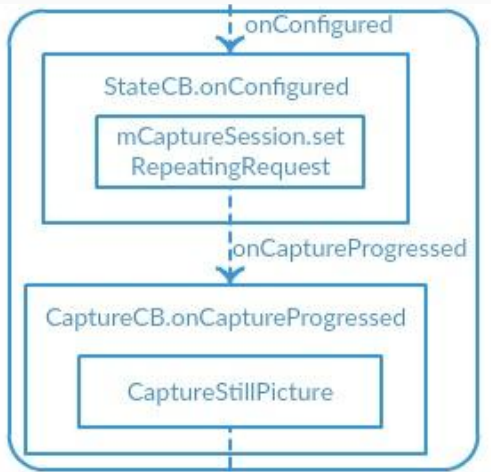The *goal* was to document the structure of the code using flow-diagrams.

The **Camera2Basic** code can be divided in three part.

This part use the **API** to set the layouts and session.

Diagram

A hardware part that configures and prepares the camera of the device.

And an image file that can manage the picture and save it in the device.

Now what?

This knowledge can be used to implement an Android app that uses the camera for custom scientific applications.