

Overview

This was a module in our application that we created to detect medicines of specific brands and show related information about a product. To achieve this we have used tensorflow object detection Api, and to use this in our mobile device we have used Tensflowflow light.

What is TensorFlow Object Detection Api

Creating accurate machine learning models capable of localizing and identifying multiple objects in a single image remains a core challenge in computer vision. The TensorFlow Object Detection API is an open source framework built on top of TensorFlow that makes it easy to construct, train and deploy object detection models. At Google we've certainly found this codebase to be useful for our computer vision needs, and we hope that you will as well.



What is TensorFlow Lite

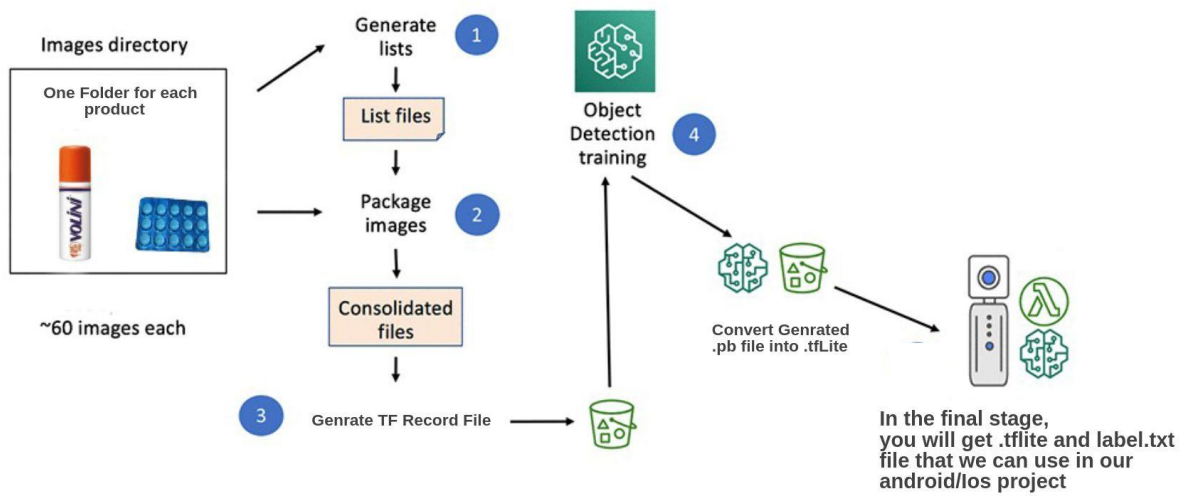
TensorFlow Lite is a set of tools that enables on-device machine learning by helping developers run their models on mobile, embedded, and IoT devices.

Key features

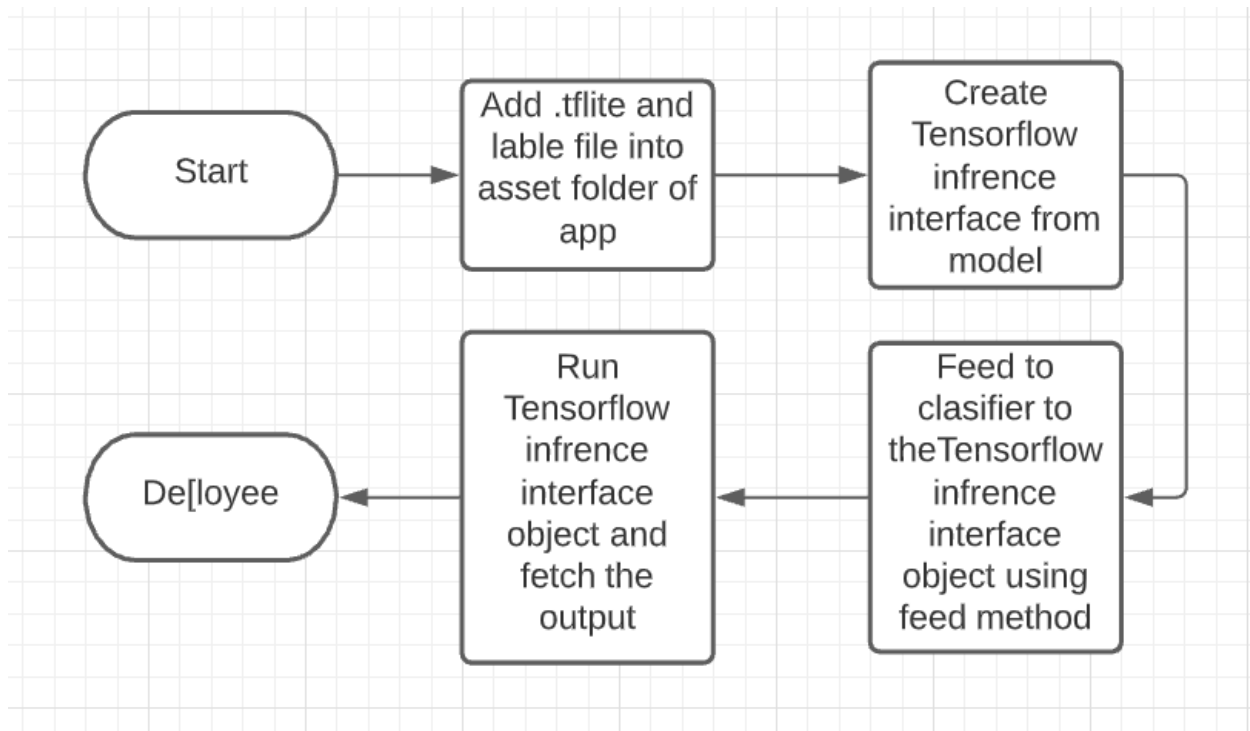
- *Optimized for on-device machine learning*, by addressing 5 key constraints: latency (there's no round-trip to a server), privacy (no personal data leaves the device), connectivity (internet connectivity is not required), size (reduced model and binary size) and power consumption (efficient inference and a lack of network connections).
- *Multiple platform support*, covering Android and iOS devices, embedded Linux, and microcontrollers.
- *Diverse language support*, which includes Java, Swift, Objective-C, C++, and Python.
- *High performance*, with hardware acceleration and model optimization.
- *End-to-end examples*, for common machine learning tasks such as image classification, object detection, pose estimation, question answering, text classification, etc. on multiple platforms.

About My Role In this Module

I worked alone on this entire module. For me the biggest challenge in this was to find some latest technology that could work with mobile devices. Till that time I didn't know much about this thing and neither did any of my co-workers. After a lot of research, I found some articles about Tensorflow. Then I finalized it after considering it with my team and started working on it. We had to use two things of Tensorflow in this TensorFlow Object Detection API and TensorFlow Lite. The API it contains is there to train the model and TensorFlow Lite is designed for mobile devices. Initially I had to face a lot of problems because the entire code of the detection API was in Python and I did not know that much but after doing a lot of research, I prepared my models and converted them to .tflite and added them for Android use



Training Flow



Android App Architecture



ScreenShot