

Black Box App for Android

CSE 403 Project proposal

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Vision & Solution

There are many times in our lives when we lose an important item, wish we could monitor something remotely, or record an important event. More importantly, there are just as many occasions where we wish those moments were stored safely elsewhere, where access is restricted by only your own conditions. Our product seeks to be a solution to these conditions, in a way that is unobtrusive and simple to use. Within the bounds of our terms of service, we wish to allow users to activate their cameras remotely to capture video that can be viewed in real time from our customer facing web service. Once the video is done transmitting, the data will be stored on our servers for future reference up to a certain cap.

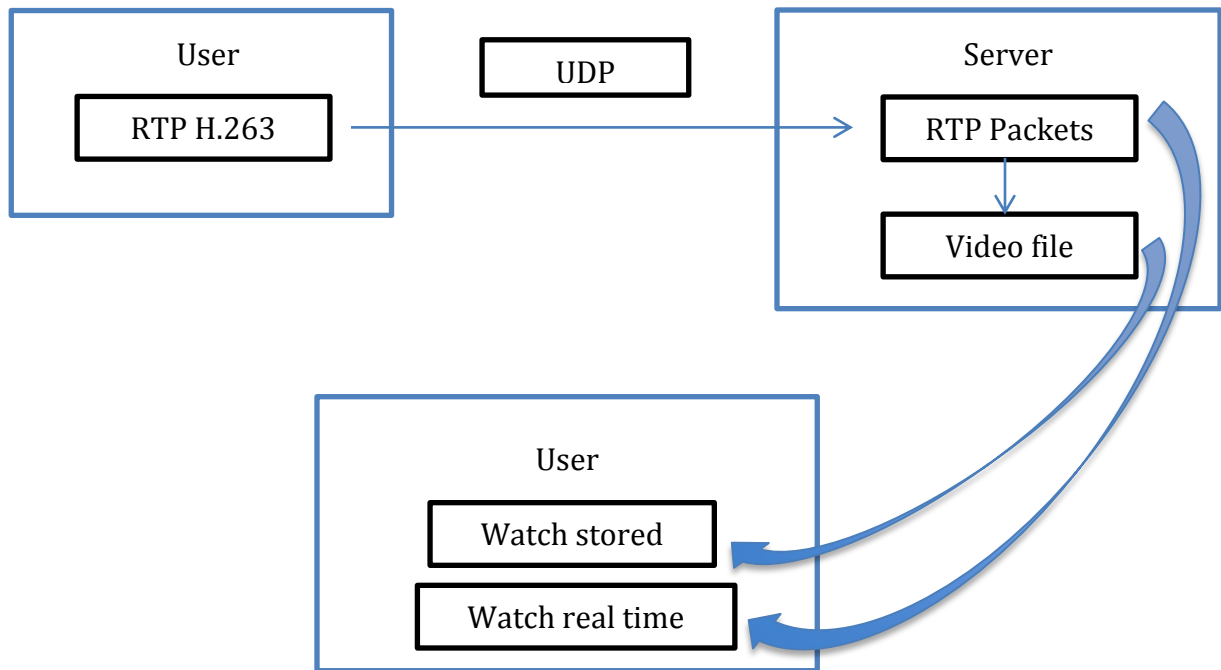
Our product differs from typical camera apps in a few small but meaningful ways. The focus of our product is not to provide an application that will allow the user to capture beautiful videos. There are a ton of apps already available within the app store that capitalizes on those features. Rather we focus on providing a safe and secure way to capture video at any time and at any location. If you are out drinking and happen to lose your phone, you can start up the app remotely get visual cues of where your phone might be. Or if you are away and need to leave your newborn with your children for a few hours, you could periodically start up the app to make sure that everything is okay.

Technology Stack

The product will be separated between a mobile app for phones and tablets that will handle the recording and the transmittance of data and an externally facing web service that will allow users to interact with their device, recording video and uploading them to our servers as they please. Our initial app will be based on the Android SDK to be used on Android devices. The web stack will contain HTML, CSS, JavaScript, and PHP and be run on an Apache web server.

Architect

When Android device starts the app, video and audio begin to be recorded by camera and microphone and converts to RTP H.263, and then its packets transfer to the server through UDP. When user requests, the server forwards the packets to user's web browser while storing them to save as a video file when transfer from Android device is over. The user can either watch real time video using RTSP decoding the packets or watch video file that is stored in the server.



Minimum Viable Product & Risk Factors

The minimum product that we could deliver to address this problem would be any app that can remotely activate a device's camera and upload the contents of the video to our web servers. The risks that could prevent us from being successful could extend from a lack of suitable API for the Android platform. There needs to be more research to really investigate the feasibility of this project, including whether there exists an API to activate the camera remotely.

What are we delivering in this project?

The deliverable in this project is both a website and a mobile application. They will work together in tandem to allow the user to remotely record video from any location, provided there is a cellular connection. There will be no source code included in this project but it will be included within the Google play store for others to download and consume.