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#hackAndroid

Background

Imagine you are a biologist and just made a groundbreaking discovery with your microscope which you want to share and discuss with your colleagues or friends. As fast as possible! What do you do? One possibility would be to start the PC which is connected to the microscope and take the image and send it via email or upload it to some web space. Another way is that you take your reflex camera, than copy the image via WIFI to the PC or take the SD card to your PC.

Much easier would be to use the ZEISS ExoLens adapter to connect your smartphone to the microscope. With a single click on a button the image can be captured and sent to the Amazon AWS cloud for image processing and publishing.

The Task

1. Write an Android app which can take images using the camera of the smartphone.

   The app should offer a preview in order to let the user adjust the most important camera settings (ISO, focus, exposure time, …).

2. Extend the app to upload the captured image to an Amazon S3 bucket for further processing.

Literature & References

- Camera API 2: Information about the new Android camera API (camera2) can be found here:
  - https://developer.android.com/guide/topics/media/camera.html
  - https://developer.android.com/reference/android/hardware/camera2/package-summary.html

  Google also provides example projects for using the camera which can be found here:
  - https://developer.android.com/samples/Camera2Basic/index.html
  - https://developer.android.com/samples/Camera2Raw/index.html

- Information on uploading file to an Amazon S3 bucket can be found here:
    - http://docs.aws.amazon.com/mobile/sdkforandroid/developerguide/Welcome.html
    - http://docs.aws.amazon.com/mobile/sdkforandroid/developerguide/s3transferutility.html