

# Mobile\_Lesson4: Accessing the hardware components of the Android system

Please do not forget to submit your feedback after the class. This feedback helps a lot in increasing the effectiveness of the course. Use the related Canvas survey to submit your ICP # and feedback

## Lesson Overview:

In this lesson, we will learn how to access the Android system's different components, such as the camera, location, and sensors. These can be incorporated into any apps to add more features and apps built entirely on these components.

## Use Case Description:

**Android Hardware:** Maps, Camera, Audio, Storage

## Programming elements:

Accessing the different hardware components of the Android system(location, camera, microphone, Accelerometer, Gyroscope)

## Source Code:

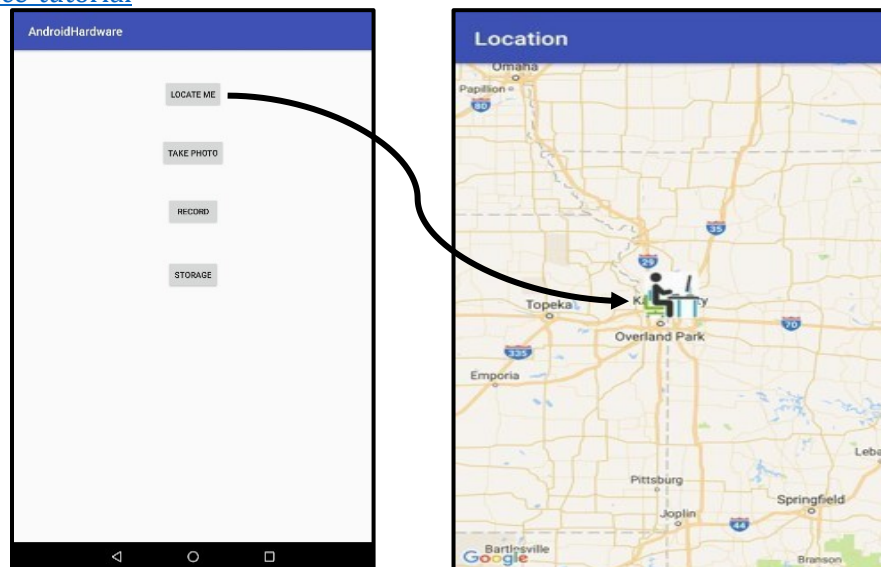
<https://umkc.box.com/s/uj71gy5e2mfb3cdr1wjgdp7rbvod9m>

## In Class Programming (ICP):

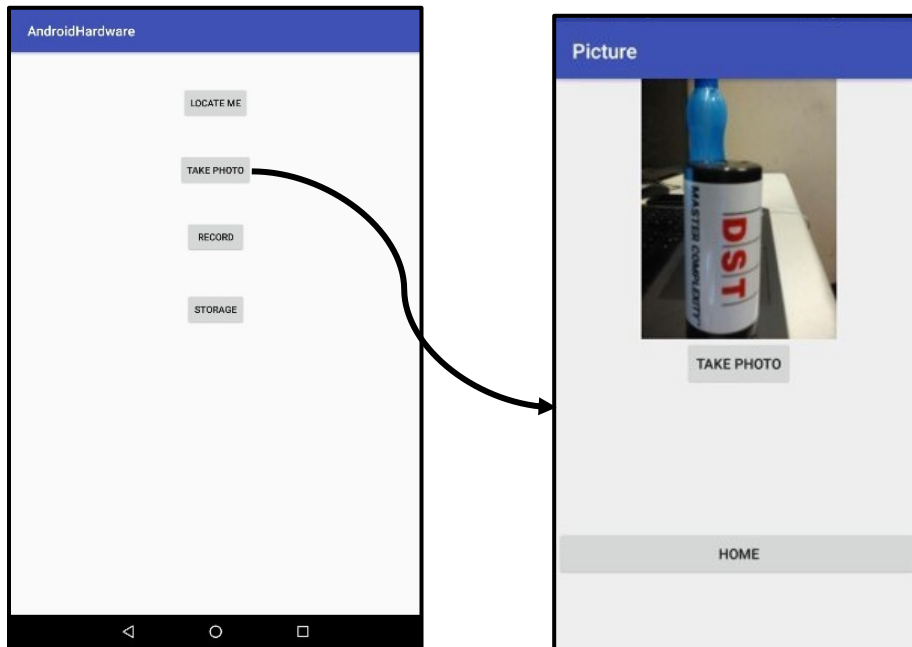
We have provided most of the code, and you can update the given source code to complete the ICP. **However, don't limit yourself to shared example screens, and you can be more creative.**

### 1. Google Maps:

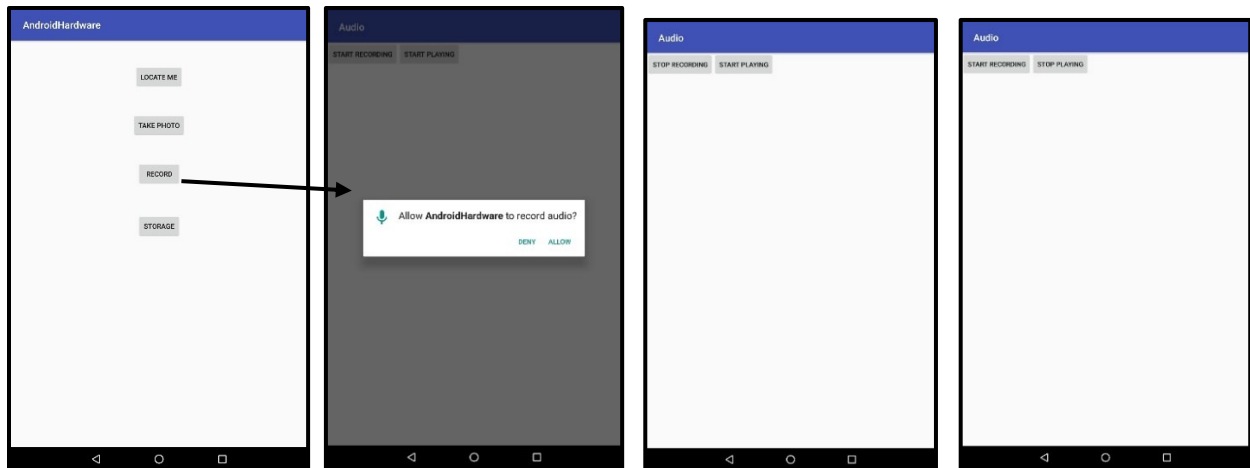
- Modify the **LocationActivity** class to display the user's current location with a marker on the map
- Hint:** Use Location service and Geocoder classes to complete the task
- Reference: <https://developers.google.com/maps/documentation/android-api/current-place-tutorial>



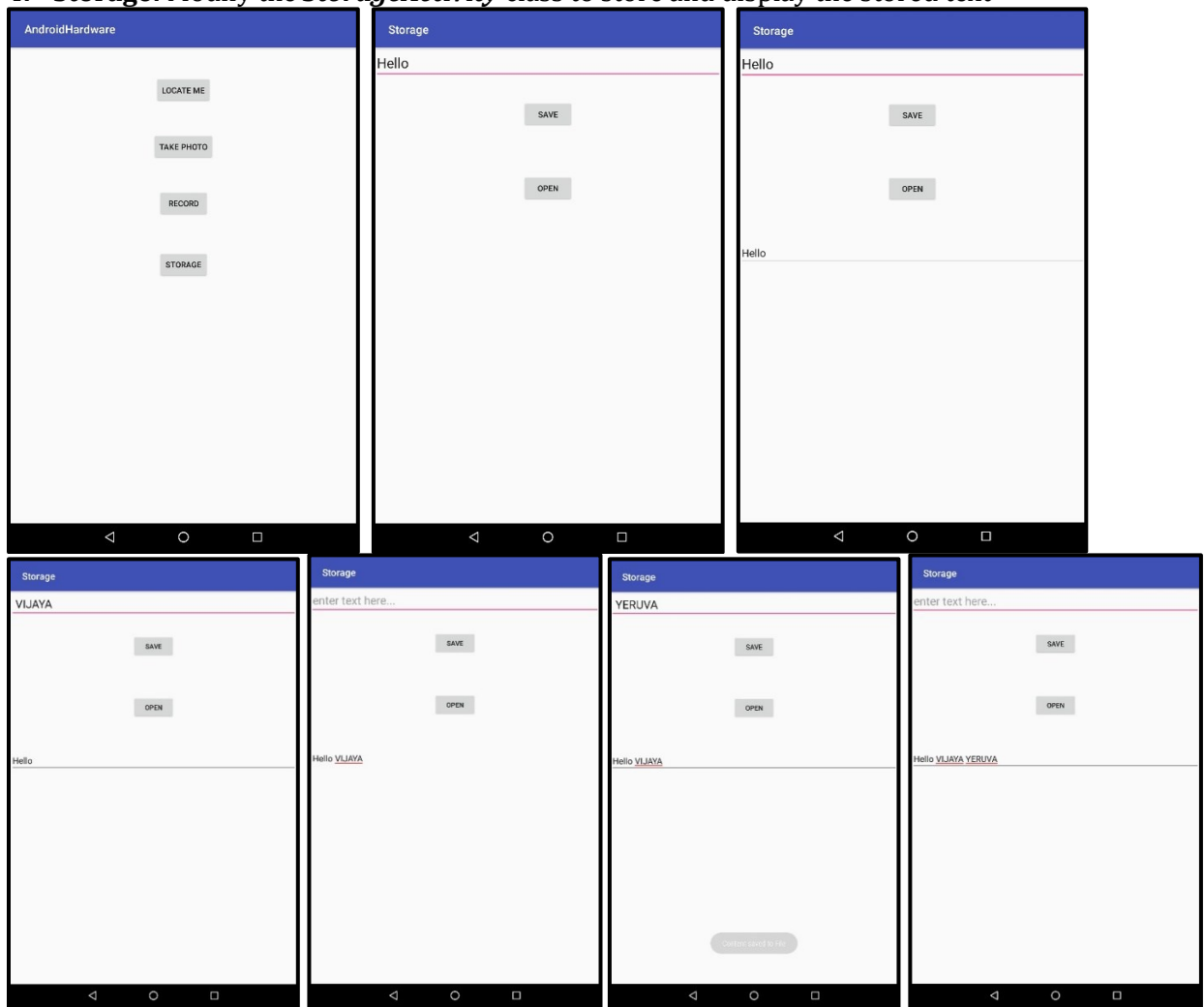
2. **Camera:** Modify the *CameraActivity* class to capture the image



3. **Audio (microphone):** Modify the *AudioRecordingActivity* class to record and reply to the audio



#### 4. **Storage:** Modify the *StorageActivity* class to store and display the stored text



#### ICP Submission Guidelines

1. ICP submission is an individual contribution
2. Submit your source code and documentation to GitHub and represent the work through the wiki page accurately (submit your screenshots as well. The screenshot should have both the code and the output)
3. Comment your code appropriately
4. Video submission (3 to 5 min video showing the demo of the ICP, with brief voiceover on the code explanation)
5. Submission after the due date is considered as a late submission. (Check the 'Late Submission Policy on Assignments' in the syllabus)
6. Use the related Canvas survey to submit your ICP # and feedback

#### ICP Rubric Details

You can find ICP Rubric Details in both the Syllabus and Canvas ICP assignment.

Criteria	Novice	Competent	Proficient
Wiki page (25)	Basic wiki page. ( $\geq 0$ to $\leq 5$ )	Wiki page with the required details. ( $> 5$ to $\leq 15$ )	Wiki page with all details and making it easy to follow and understand. Visually looking good. ( $> 15$ to $\leq 25$ )
Video (25)	Basic video. ( $\geq 0$ to $\leq 5$ )	Video with the required details. ( $> 5$ to $\leq 15$ )	Video with all details and making it easy to follow and understand. Annotated with the subtitles. ( $> 15$ to $\leq 25$ )
Completeness of given assignment (25)	It is partially solved. ( $\geq 0$ to $\leq 5$ )	Completely solved. ( $> 5$ to $\leq 15$ )	It is solved efficiently. ( $> 15$ to $\leq 25$ )
Code Quality (It is relative) (10)	Refer to the <a href="#">best coding practices</a> page. ( $\geq 0$ to $\leq 5$ )	Refer to the <a href="#">best coding practices</a> page. ( $> 5$ to $\leq 8$ )	Refer to the <a href="#">best coding practices</a> page. ( $> 8$ to $\leq 10$ )
Commenting the code (10)	Not useful comments. ( $\geq 0$ to $\leq 5$ )	Slightly appropriate comments. ( $> 5$ to $\leq 8$ )	Appropriate comments. ( $> 8$ to $\leq 10$ )
Time of submission	Submission after the due date. Check the 'Late Submission Policy on Assignments' section in the syllabus	Submission on the deadline. No score will deduct from the obtained score.	Submission before the deadline. No score will deduct from the obtained score.
Submission (including feedback) (5)	Submission with partial details. ( $\geq 0$ to $\leq 3$ )	Submission with the essential details. ( $> 3$ to $\leq 4$ )	Submission with all the details. ( $> 4$ to $\leq 5$ )
<b>Total</b>	<b>Minimum = 0</b>		<b>Maximum = 100</b>

**Note:** Cheating, plagiarism, disruptive behavior, and other forms of unacceptable conduct are subject to strong sanctions under university policy. See detailed description of university policy at the following URL: <https://catalog.umkc.edu/special-notice/academic-honesty/>