

Distributed Systems – Assignment 1

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ABSTRACT

Concisely state (i) which Android device you used, (ii) which tasks you completed and which are working correctly or limited, and (iii) what your specific enhancements are.

1. INTRODUCTION

Use the introduction for background information on the assignment. See your assignment sheet for specific questions on the topic that you have to answer in this section. Use references such as books [2], papers and theses [4], or specifications [3] whenever available. Web sites for documentation [1], tutorials, etc. are a special case. In a thesis, you would put them as footnotes. At this stage, however, you will only have a few “real references,” so we put the Web sites into the bibliography. Cite every source you used throughout the assignment.

2. SENSING WITH ANDROID

1. Describe the user interface design for listing all available sensors of the smartphone
2. Describe the user interface design for continuously displaying the readings for a particular sensor
3. Show screenshots for the MainActivity, SensorActivity and ActuatorsActivitiy. Please include only 3 screenshots packed together as shown in Figure 1(a) and Figure1(b)
4. What are the main methods implemented in this part? How do they interact? You can include a state transition diagram like the one shown in Figure 2.

3. THE ANTI-THEFT ALARM

1. Explain in details the sensor logic you designed which is needed to trigger the alarm. You can also include code snippet as shown in Listing 1.
2. What are the main methods implemented in this part? How do they interact? You can include a state transition diagram like the one shown in Figure 2.

Hint: Just like figures, code listings can convey concise information about your solution. However, you still need to reference and explain them in the text (cf. Listing 1). Only use a listing for really important parts and omit them if it would just be a random part of your code.

```
1 @Override
2 protected void onProgressUpdate(final Integer...
   values) {
3     textView.setText(index + " done");
4     progress.incrementProgressBy(values[0]);
5 }
```

Listing 1: Descriptive Caption Text



Figure 1: Pack portrait screenshot next to each other and make them referable through the subfigure package. When next to each other, make them the same height.

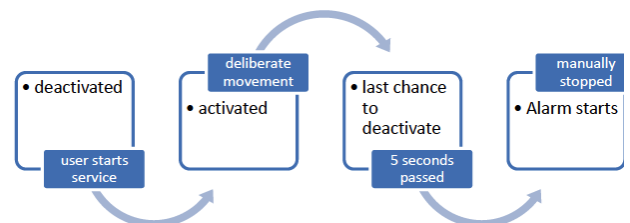


Figure 2: Only include useful figures. Do not simple copy something from a Web page.

4. ENHANCEMENTS

1. Explain the design/implementation details to visualize the sensors' readings
2. How did you overcome the suppression-of-sound problem? Detail how you implemented this part.

5. CONCLUSION

Give an overall conclusion that summarizes the main challenges you encountered and your lessons learned.

6. REFERENCES

- [1] Services: Sending Notifications to the User. <http://developer.android.com/guide/components/services.html#Notifications>. Accessed on 29 Aug 2013.
- [2] E. Burnette. *Hello, Android: introducing Google's mobile development platform*. Pragmatic Bookshelf, 3 edition, 2010.

- [3] R. Fielding, J. Gettys, J. Mogul, H. Frystyk, L. Masinter, P. Leach, and T. Berners-Lee. Hypertext Transfer Protocol – HTTP/1.1. RFC 2616, 1999.
- [4] R. T. Fielding. *Architectural Styles and the Design of Network-based Software Architectures*. Phd thesis, UC Irvine, 2000.