HotCoffee: Coffee Warmer for Android

Android Lab
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Team

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Motivation

Apps continue to enhance the functionality of mobile devices, thus enabling people to work anywhere and anytime. While the devices are more and more capable we face the challenge to keep the user's productivity on a sufficiently high level as well. This largely depends on the amount of coffee available to a user.

Usually a cup of coffee is consumed during an extended period of time Especially in phases of deep concentration, a user might forget his coffee. The result: ***COLD*** coffee. In order to increase users' wellbeing and productivity, we suggest a system that enables an Android system to heat a cup of coffee and keep it warm while it is not consumed.

Eureka, 01.04.2014

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Goals

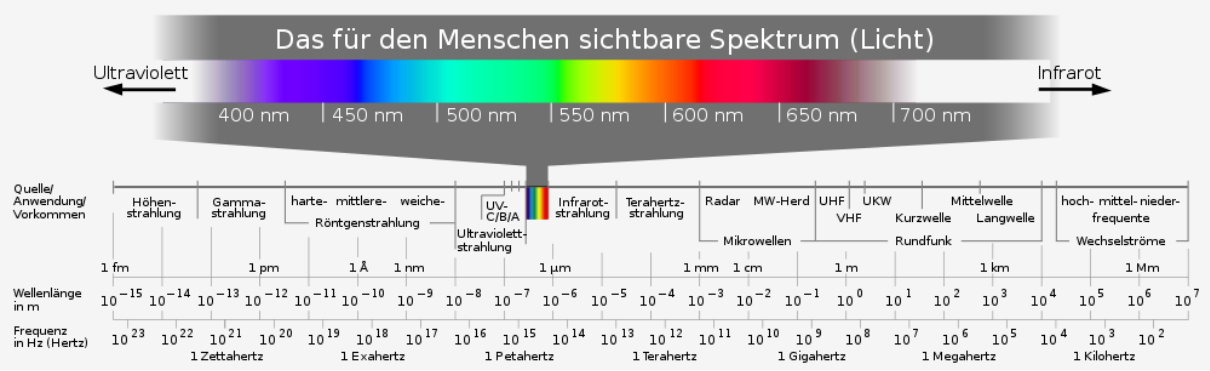
An application that preserves the optimal drinking temperature of a cup of coffee.

Requirements

- Graphical User Interface for Configuration
- Different heating levels, depending on the user's preferences
- Less than 3°C heat loss in 60 min
- Estimate remaining runtime of the Android device

Solution

Android phones provide a large variety of communication hardware. Especially Wi-Fi and Bluetooth but also some 3G/4G networks operate in the microwave band. Therefore the application will activate all these communication interface with high transmission power. The user will be asked to place the coffee near the antenna within the main transmission beam.



Project Plan

Background Research	04.04.14	20.04.14
Creating 3-SP	05.04.14	13.04.14
GUI Prototype	13.04.14	30.04.14
Evaluation Heating Methods	13.04.14	15.05.14
Review 1	16.05.14	17.05.14
First Integration, Prototype	18.05.14	30.05.14
App, functionality & Refine GUI	17.05.14	18.06.14
Testing	19.06.14	26.06.14
Review 2	**27.06.14**	**28.06.14**
Splash screen, Help	29.06.14	07.07.14
Create final presentation	29.06.14	11.07.14
Final presentation	**13.07.14**	

Potential Problems and Counter-Measures

Maybe the available microwave power is not sufficient to heat the coffee. In this case we will implement a more conventional means of heating: Exhaust heat form the CPU. To realize this it is sufficient to run a program that taxes the CPU. A good candidate would be a Fourier transformation, which is also scalable to multiple processor cores.
Maybe users will sue for damages, because they damaged their device by immersing it into coffee. Therefore we will integrate multiple warnings and an EULA the user needs to acknowledge before using the application.