Senior Project Proposal

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# Scripture

Ether 3:4 And I know, O Lord, that thou hast all power, and can do whatsoever thou wilt for the benefit of man; therefore touch these stones, O Lord, with thy finger, and prepare them that they may shine forth in darkness; and they shall shine forth unto us in the vessels which we have prepared, that we may have light while we shall cross the sea.

# Abstract

The focus of this project is development on a mobile phone. This project will allow the user of an Android phone to schedule when their ringtone will turn on and off so that no further user involvement will be needed to change the ringtone. For example, all teachers I have had have requested that we turn off or set our cell phones to silent while in their class. This project will allow a student to create a schedule to set their phone to silent when class starts and turn the ringer back on once class is over. This way they don’t have to remember every time.

# Background

## Definitions

* Ringtone – Includes the phone ringer, notification ringer, and the vibration setting for those two types ringers.
* Media volume – The volume of a device while playing a game or other sounds not included with the phone ringer or notification ringer.

## Why this topic is of interest

I have always (since I first owned a cell phone) wanted the ability to schedule when a cell phones ringer turns on and off. However this option wasn’t easily available to me until I purchased my cell phone. The reason that I have wanted this feature is that cell phones have a tendency to ring at the most inconvenient times, such as in class or in the middle of Sacrament meeting. This program is designed to allow the user to set specific times when the mobile phones ringer is turned on or off so the user doesn’t have to remember to silence during these times.

## Prior work by others

Currently there are several programs on the Android market that aim to do the same thing as my project is proposed to do. However, according to my knowledge none of these other programs are open source. Another program that has some capabilities similar to what I am planning is called BusyBox. This program implements many features found in a Linux environment on an embedded device; including crontab. Although this program may prove useful I don’t intend on using it [2].

## Prior work by me

I am familiar with creating Android applications from my previous senior project. This project is different in that I need to create both a service and an activity where previously I only needed an activity.

# Description

The purpose of this project is to be able to control the ringer on a phone by a predetermined schedule. This schedule will be determined by individual events. An event will allow the user to turn the phone to silent, vibrate, or turn the ringer on. Also the ringer and vibrate feature will be able to be turned on at the same time. By creating and or deleting events a complete schedule can be created. As an example to set the phone to silent and then turn the ringer back on an hour later, two events will need to be created.

Each event will have the ability to run on multiple days of the week and will be repeated each week. However, each event can only occur once per day. An event will also have a title for the users benefit. This title is optional. An example event is I want my phone set to silent every Monday, Wednesday, and Friday at 10:15 am. The title for this event is “class”.

This project is comprised of two parts the activity and the service [1]. The user will set all the events in the activity. The events will then be registered with the service and run by the service. The service will start when the phone boots and will run until the phone is shut down again.

## What Defines a Successful Project

This project will be considered successful if I am able to start the activity and the service, schedule a couple of events, close the activity, and have the service execute the scheduled events. In the execution of the events the service must be able to turn the ringer on or off based on what is scheduled in the event.

## Tasks Required

* preliminary research and proposal preparation
* Research
* Requirements Specification
* Design
* Coding
* Testing

# Scope

This project must be able to change the state of the ringer on a phone based on a predefined schedule. Although it is tempting to write an all purpose scheduler for the android phone this project is limited to scheduling when the ringtone is turned on and off. Although this program sets the ringtone to silent, the phone may still make noises. An example is if the media player starts playing a song whether that song is heard or not is outside the scope of this project.

# Tasks and Schedule

The schedule that I will follow for this project will be as follows.

|  |  |  |  |
| --- | --- | --- | --- |
| Task | Start Date | End Date | Hours to Completion |
| Time spent on previous project |  |  | 192 |
| Preliminary Research and Proposal Preparation | 4/15/11 | 5/15/11 | 10 |
| Research | 4/16/11 | 5/30/11 | 30 |
| Requirements Specification | 5/31/11 | 6/2/11 | 5 |
| Design | 6/3/11 | 6/17/11 | 25 |
| Coding | 6/18/11 | 7/9/11 | 35 |
| Testing | 7/10/11 | 7/20/11 | 17 |
| Total Time spent on project |  |  | 314 |

# Deliverables

The following are items that will be provided throughout and upon the completion of this project.

* Proposal
* Requirements Specification
* Design Documentation
* Source Code
* Status Updates

# Applicability

This project incorporates a bit of the current curriculum of the BYU-Idaho Computer Science program. The ways in which this project incorporates the current curriculum is that it will be written in Java which is taught in the Software Design and Development class.

This project is exclusive of the Computer Science curriculum in that all processing will be done on a mobile phone which isn’t covered in any of the classes that I have taken. Not only is this program just going to be run on an Android phone but it will also need to interact with the system settings of the device to accomplish its task.

# Required Resources with Costs

This project doesn’t require many resources and I already have all the resources that I need to complete this project. The following is a list of resources that I will need for this project.

* An Android mobile phone
* A computer to develop the application on

# References

[1] *Android Developers Guide.* (2011). Retrieved May 14, 2011, from <http://developer.android.com/guide/index.html>

[2] *BusyBox: The Swiss Army Knife of Embedded Linux.* (2009). Retrieved May 13, 2011, from <http://www.busybox.net/downloads/BusyBox.html>