Project Plan

Group: Dec14-05

TV Remote Scheduling App. For Android™

Cimone Wright, Brianna Tegeler, Dallas Thole, and Josh Carritt

Version	Date	Author	Change
1.0	02/07/14	CLW	Initial Document
1.1	2/19/14	CLW	Compiling all individual contributions

1 Introduction

1.1 PROBLEM STATEMENT

Television remotes typically have between 30 – 50 buttons. Setting a television with these remotes is impossible to do for many elderly people. Television programming schedules are often difficult to read or comprehend by many elderly individuals even if they have the mental and physical capability to select channels with a TV remote.

There are some very simple TV remotes that are marketed to support the geriatric population but many elderly people even have difficulty using these and they lack the programmability required to set up a pre-determined program schedule throughout the day or the week. Many people in nursing homes spend much of their day watching television yet they have a difficult time selecting television programming that meets their interests.

1.2 SOLUTION

To create a television controller and interface that allows for weekly television programming selection. This controller will autonomously change the channel based on the information programmed. This device will be geared toward elderly, physically and/or mentally impaired individuals.

1.3 SCOPE

Create a basic working prototype of the android application by the end of spring 2014.

1.4 DEFINITIONS, ACRONYMNS, ABBREVIATIONS

Term	Description
STB	Set Top Box
USB	Universal Serial Bus

1.5 REFERENCES

Irdriod user manual:

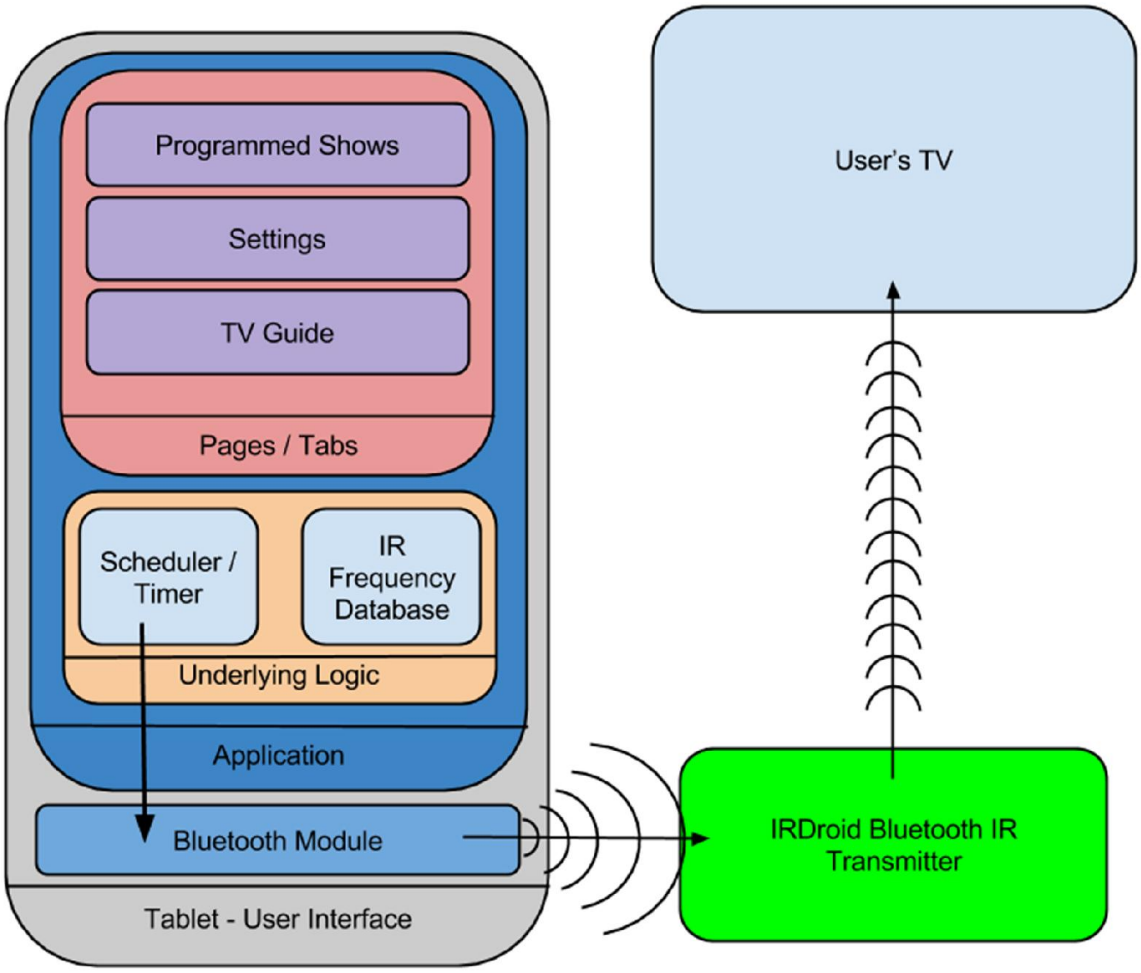
http://www.irdroid.com/wpcontent/uploads/2011/10/Irdroid_Users_Manual_1.0.pdf

Nexus 7 user manual:

http://nexusmanual.com/

2

2.1 SYSTEM DESCRIPTION

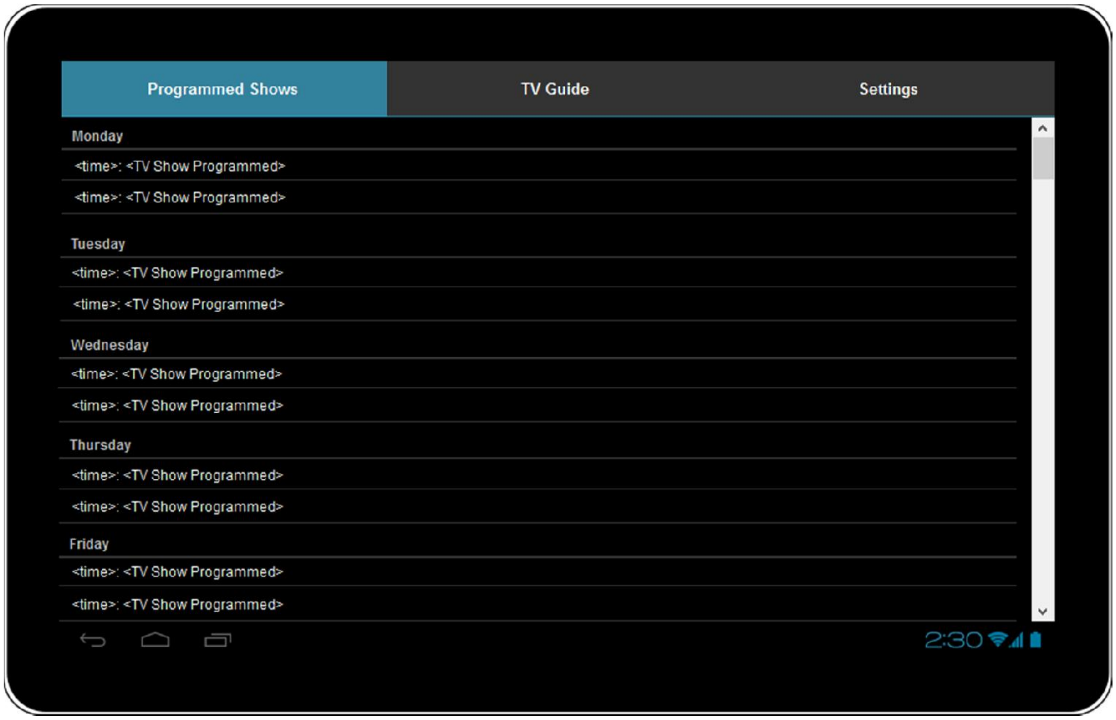


Our system is built around android development, and the open source device known as the IRDroid v2.0 Bluetooth IR transmitter. Our application will be run on an android device and contain two main components.
The graphical user interface composed of pages or tabs, and the underlying logic.

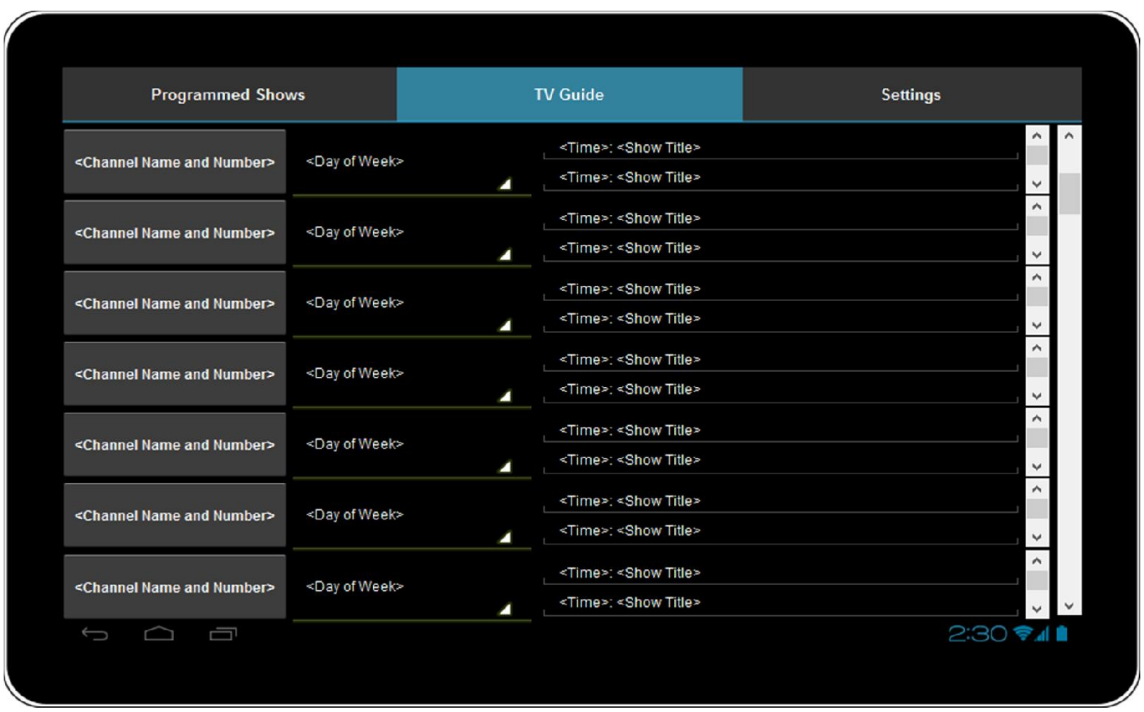
The Graphical user interface is split into three main pages, the Programmed shows page, which shows the user their current programed schedule for the week, the settings page, which allows the user to change the brand of television, the service provider, and the time of day to power on/off the television.

The underlying logic portion is comprised of two main pieces, the scheduler, and the IR Frequency database. The scheduler is in charge of reading the users programed shows and sending the correct signals to the Bluetooth device at the right time to change to channel. The frequency database contains all the controls signals for different brands of televisions.

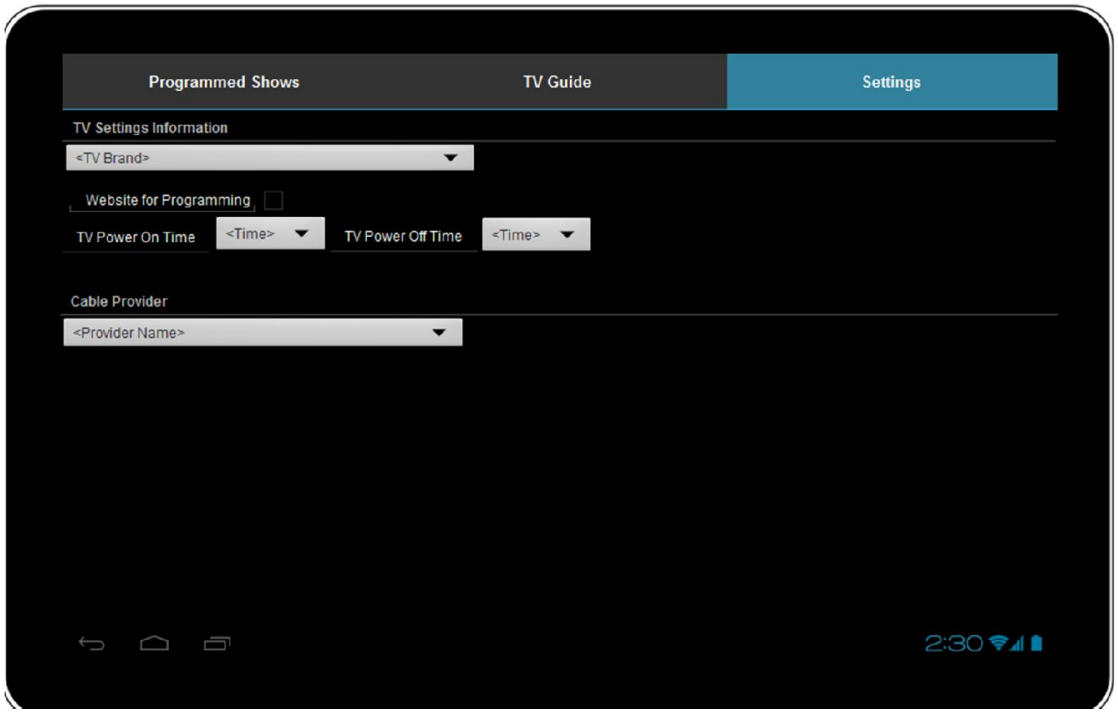
2.1.1 User Interface



Program Tab: This tab will show a list of all of the scheduled programs for the current week. This can make it easy to see which programs were scheduled throughout the week.



TV Guide Tab: This tab will take the information about the cable provider in the settings tab and show that providers guide for the current week.



Settings Tab: This tab will control the settings of the app. It will be capable of selecting the TV brand, the cable provider, and what times the TV will turn on and off each day.

2.1.2 Functional Requirements

- Wireless Internet access
- TV guide or cable data must be able to parse through in order for the user to be able to selection a program to watch.
- Storage of user input must stay on the device until the user deletes it.
- Autonomously change channel
- Data must be available before channel programing can occur
- Limit access to authorized users

2.1.2.1 Non Function Requirements

- The hardware/software should change the channel fast.
- The buttons/text should be large for ease of use.
- The software should auto connect to hardware with Bluetooth.
- The hardware/software should be able to run 24/7
- The app should be able to automatically find the right TV code for the TV set up.

- The software should pull up the correct TV guide based on area.

2.1.3 Hardware Interfaces

- Irdriod: A device that sends information through infrared and Bluetooth.
- Table: A compact computer with multiple sensors, a display, and single battery unit.

2.1.4 Software Interfaces

There will be an android application that to control the television and channel the channel when the scheduled program is within 30 seconds of starting. A website will complement application to allow remote assistance in configuring which shows will be watched when.

2.1.5 Memory Constraints

The amount of memory will vary from tablet to tablet. The main tablet being used to construct our nexus 7 tablet is 1 GB. We do not plan to get anywhere near this memory constraint.

2.2 USER CHARACTERISTICS

The typical user will be an elderly, disabled, and/or mentally impaired individual. Occasionally, this person will have assistance from a more skilled individual in order to program which programs they would like to watch throughout the week.

2.3 CONSTRAINTS

Internet: This software requires the user to have internet capability on a regular basis.

Tablet Memory: The maximum amount of memory for the specific tablet we are using is 1 GB.

2.4 OPERATING ENVIORNMENTS

This product will be operating in a nursing homes lobbies and patient's personal rooms. The tablet will be mounted on the wall and the android will be inserted in the television USB port.

2.5 DEVLIBERABLES

Android application (Spring 2014)

- Design user interface
- That has the basic functionality of changing the channel.
- Parsing through TV guide
- Storing user selection from TV guide
- Organizing user input

- Changing the channel autonomously

Internet Site (Fall 2014)

- Design user interface
- Login authentication
- Parsed TV guide information
- Storing user input
- Sending information to android application

2.6 WORK PLAN

Resource requirements:

- Tablet
- Wireless internet
- Irdroid
- Television

Project Schedule (Spring 2014 ONLY)

Deliverable	Date	Comments
Design user interface	2/26/2014	
Changing the channel from application	3/5/2014	
Parsing through TV guide	3/9/2014	
Storing user selection from TV guide	3/19/2014	
Organizing user input	3/23/2014	
Changing the channel autonomously	3/28/2014	
Polish User Interface	4/9/2014	

Risks

Not being able to have wireless internet access on a regular basis. This is needed for the application retrieve the most recent television guide. Being able to get the TV guide for various cable companies and/or being able to identify the cable box. This would prevent our entire project from working.