EECS 3461: Assignment 5

Due: Tuesday, December 2, 2014
(6 % of the final grade)

Motivation

This assignment will allow you to practice using multiple usability methods to develop a user interface for a consumer electronics device.

Introduction

Personal Video Recorders (PVR) is a consumer electronics device or application software that records video in a digital format to a disk drive, USB flash drive, SD memory card, SSD or other local or networked mass storage device. Hardware PVRs often include one or more tuners to enable the reception and recording of one or more broadcast channels. Furthermore, some of the PVRs are integrated with TV sets; to reduce the number of remote control units one needs to use to operate the equipment.

Description

In this assignment you will have to do the following:

Develop and implement the layout of a remote control that operates a PVR device embedded in a television set. Use all of the UCD steps covered in class (except for "updates and maintenance"). Also, try to employ the usability methods discussed recently that are relevant at a particular stage.

The following functionality should be available:
- changing the channels
- volume adjustment
- brightness adjustment
- switching between signal sources (for consistency, assume the sources are TV, PVR, Aux. HDMI, Aux. Composite)
- PVR: play, pause, stop, fast forward, rewind
- PVR: record a current video stream; record a program sometime in the future.

The implementation should use Java (Java Swing or Java FX). In your software, please include both the representation of the remote control, and the depiction of the TV screen (e.g., side-by-side) Assume a 16:9 display aspect ratio, and that the TV screen is capable of OSD. Note the description of the requirements is intentionally brief. Part of your work is to investigate if any additional aspects need to be addressed that were not specifically mentioned.

If you have any questions, don't hesitate to contact the instructor (andriyp@cse.yorku.ca).

Grading

The assignment is worth 6 % of the final grade. The points will be given as follows:

- 3 points: all of the described functionality is implemented, and the application works correctly and does not crash;

additional points:

- 1 point: which usability methods were used and how
- 2 points: how the application abides by the usability principles (such as visibility, feedback etc.) and how it achieves the usability goals (such as how effective the application is, how easy it is to learn etc.) Attention will be paid to how the application's conformance to the guidelines was evaluated.

Submission

Submit your application files and a report as a Word or PDF document electronically via `submit` by the deadline. Name the Java class **a5** and name the report **Report**.<*extension*>. Insert any screenshots, and other illustrations into your main report.

Note that the report need not follow any particular format: it's merely a way for the marker to judge whether you employed any relevant usability methods, built any prototypes (please insert scans, pictures or screenshots of your prototypes – if any).

Late penalty is 20 % per day. Submission 5 days or more after deadline will be given a mark of zero. Contact the instructor *in advance* if you cannot meet the deadline explaining your circumstances.

Academic Honesty

Direct collaboration (e.g., sharing designs) is not allowed. However, you're allowed to discuss the ideas, approaches you take, etc.

State any sources you use (online sources, books, etc.)