CS 491 Final Project

Sphero

1 Overview

For this final project you will write an Android app that interacts with a Sphero robotic ball that Orbotix has graciously provided to us. Your job is open-ended: design and implement an interesting app that involves both the Sphero and an Android device. The Sphero may be used as a controller for action that occurs on the phone, the phone may be used as a controller for moving the Sphero about the physical world, or you may pursue some hybrid approach.

The Sphero examples that we wrote in class are available on the class folder on the W: drive. You are strongly advised to check out the samples from Orbotix at `https://github.com/orbotix/Sphero-Android-SDK`. The example code demonstrates collision detection, the gathering of orientation information, calibration, and so on.

2 Requirements

To satisfactorily complete this project, please do all of the following:

1. Work in teams of three. We only have so many Spheros; smaller teams are not possible. I strongly suggest you elect one media-savvy individual to be the spokesperson who works on the pre and post mortems described below.

2. Develop an app that no other team is pursuing. Once a team publishes their pre mortem on the blog, no other team may pursue the same idea. Teams wanting to write a multi-Sphero app are encouraged to enlist the aid of other teams to run their app on the others' devices and Spheros.

3. Post a design document on the blog with at least three sections: 1) overview (what's the point of the app? what will its screens look like?), 2) identify the risks and hurdles that need to be overcome to complete the project by the final exam period, and 3) the division of labor (what tasks will need to be completed in what order and by whom?). This must be posted by the end of Monday, November 19.

4. Handle disruptions gracefully. Reconnect your robot transparently on resuming. Don't let the device sleep once connected.

5. Design an app that is coherent and purposeful. It is not enough to just make an app that moves the Sphero around.

6. Share either a video or a live demonstration of your work during the final exam period. Presentations should last 5–10 minutes. Discuss tricky algorithms, interesting interface designs, and research conducted to get a working app.

7. Summarize your presentation in a blog post mortem that includes screenshots of your user interface and preferably video of your app in action. This must be posted by the final exam period.

8. Export your project to `W:\c s\CJohnson\cs491\<USERNAME>\final.zip`