Smart Dashboard 2012 Quick Start

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Introduction

For 2012, WPI has included a software library and remote client to simplify visualizing robot information on laptop dashboard display. When a log command is run on the robot, the remote dashboard will automatically display its name and value on the screen.

The Smart Dashboard now also supports sending information to a running robot; for example, one could use the Smart Dashboard to select which autonomous mode to run.

Robot Side

The following examples show Java syntax. However, the smart dashboard robot side library is also provided for C++ with a very similar naming scheme.

One may send data to the dashboard like so:

    SmartDashboard.log(left_joystick_value, "Left Joystick");

The first argument is the value to log; the second is the name of the field as it should appear on the dashboard. This method supports all primitive data types as well as strings. For more information about the methods available to you, see the WPILib documentation or source code.

Dashboard (laptop) Side

The SmartDashboard client currently consists of a single jar file. On most computers, double-clicking this file will run the dashboard.

If for any reason this does not work, one may also run the SmartDashboard by invoking Java from an appropriate command terminal:

    > java -jar path\to\SmartDashboard.jar

In order for this command to work, Java must be on the system's execution PATH. For more information about how to do this, see the Java online tutorial here:
http://download.oracle.com/javase/tutorial/essential/environment/paths.html

Dashboard Customization

Once the dashboard client is initialized and the robot code is sending data, default widgets will be automatically placed on the screen. These may be relocated to any unoccupied place on the screen by dragging them.

Many data types can be displayed by more than one type of widget. To change the current type of widget being displayed for a particular data field, right-click on a widget and select a replacement from any of the choices which are listed next to the "Change to…" menu item.

In addition, custom widgets may be written and used with the Smart Dashboard. Tutorials for writing your

own widget are available here:
http://firstforge.wpi.edu/sf/wiki/do/viewPage/projects.smartdashboard/wiki/Extensions.

Preferences

A variety of widgets offer various preferences which may be changed at any time. To view or modify these preferences, right click on the widget to modify and select the "Preferences" menu option. In the resulting popup window, double click on the value textbox to enter a new preference value. Preference changes will be applied immediately.

The SmartDashboard client also offers a handful of application-wide preferences, such as displaying video from your robot's camera or logging information to a CSV (Comma Separated Values) file. To adjust these preferences, select the "Preferences" option from the "File" menu.

Saving/Loading a Configuration Profile

Once customized to your liking, a profile may be saved by clicking "Save" or "Save As" from the file menu.

To load a profile, select "Load" from the File menu.

Compatibility Notes

The Smart Dashboard for 2012 is not compatible with the existing Dashboard classes in the Java and C++ library, the existing FRC Dashboard provided by National Instruments, or any 2011 version of the Smart Dashboard.

Profiles created with created with a 2011 version of the Smart Dashboard may not be used with a 2012 version; the format of these files have been changed to XML.

More Information

For more information, see the "WPI Robotics Library Users Guide" available online here:
http://firstforge.wpi.edu/sf/docman/do/listDocuments/projects.wpilib/docman.root.c_and_java_documentation.

Enjoy!
~Paul Malmsten and the Smart Dashboard Team