Robotics Club Week 1

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September 2016

1 Agenda

- Welcome Programmers
- Introductions - Mentors & Students
- Select note taker
- RoboRio
- Languages available for FRC
- Why we switched to Java
- Solar flare & previous robots
- How all groups play together
- Java environment
- Koans

2 welcome

These are the most important links you will need. Everything you want to know can be found here.

    http://glencoerobotics.com/forum/

    https://www.chiefdelphi.com/forums/portal.php

    http://wpilib.screenstepslive.com/s/4485

3 Programming Groups

- Robot
- Apps

Note - Don't have to stick to a group

4   Skills we teach

1. Code Collaboration - pair programming
2. Analyzing problems
3. How a computer thinks
4. Working with people outside your domain - Electrical and mech.
5. Learning how to learn a language
6. Leaning Java (Notice this is last)

5   RoboRio

`https://wpilib.screenstepslive.com/s/4485/m/13503/c/86641`

`http://www.ni.com/pdf/manuals/374474a.pdf`

`https://decibel.ni.com/content/docs/DOC-30419`

6   Languages for FRC

6.1   java

`https://wpilib.screenstepslive.com/s/4485/m/13503/l/599679-installing-eclipse-c-java`

`https://www.chiefdelphi.com/forums/archive/index.php/t-128134.html`

6.2   C++

`https://wpilib.screenstepslive.com/s/4485/m/13503/l/599679-installing-eclipse-c-java`

`https://www.reddit.com/r/FRC/comments/4k24cu/java_vs_c/`

6.3   Other

`https://github.com/robotpy/pyfrc`

7   Why we use Java

- Better visibility across mentors to assist students.
- Code check-ins & pull requests.
- Continuous integration build capabilities.
- Fast enough for what we need to do.
- Wpilib abstracts all the hardware calls away allowing us to focus on programming paradigm.

8 Robots

8.1 Eclipse

    http://www.thebluealliance.com/team/4488/2016

    https://www.youtube.com/watch?v=oxOSjQpTp3U

    https://www.youtube.com/watch?v=9WOQbL9n4Cs

8.2 Solar Flare

    http://www.thebluealliance.com/team/4488/2015

    https://www.youtube.com/watch?v=VpZazV3wP1s

8.3 Wildfire

    http://www.thebluealliance.com/team/4488/2014

    https://www.youtube.com/watch?v=tEhQnKbRz-0

    https://www.youtube.com/watch?v=lmtvsggl81M

8.4 Phantom

    http://www.thebluealliance.com/team/4488/2013

9 Camera

We currently use a logitech c920 with a kangaroo mobile computer to perform the vision processing.

10 How groups interact

Mechanical, Electrical, Business, and Apps are all required. Without them we would have nothing to program.

11 Java Environment

We use Eclipse with the NI driver station.

    https://wpilib.screenstepslive.com/s/4485/m/13503/l/599679-installing-eclipse-c-java

    https://wpilib.screenstepslive.com/s/4485/m/13503/l/599677-frc-driver-station-powered-by-ni-labview

12 Koans

    http://glencoerobotics.com/forum/viewtopic.php?f=8&t=637&p=1793#p1793

13 Extras

    https://www.youtube.com/watch?v=nZf9F-3QKMw

    https://www.youtube.com/watch?v=Qfe-zs2f2EM