Eyesim & Robotics Lab 1 Preparation

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GENG5508 - Robotics
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EyeSim Installation

All relevant files are at http://robotics.ee.uwa.edu.au/eyesim/

Supported Operating Systems:

- Windows 8.1, 10 with Cygwin, Xming
- macOS 10, 10.x with xquartz
- Linux 64 bit (tested on Ubuntu 18.04) with libx11-dev

EyeSim Installation - Linux

Install X11 library using following command:

- sudo apt-get install libx11-dev

Download the latest EyeSim

Unarchive the .tar.gz file and run the 'install.sh' script

Download and unzip eyesimX (EyeSim Examples)

EyeSim Installation - macOS

Download and install Xcode.

Download and install XQuartz.

- Note: Your system default XQuartz app may need to be removed and reinstalled from link to include X11

Run the following command in terminal to link the X11 library:

- sudo ln -s /opt/X11/include/X11 /usr/local/include/X11

Download and install EyeSim for macOS

Download and unzip eyesimX

EyeSim Installation - Windows

Download and install EyeSim for Windows

Download cygwin.zip and Xming.zip

- Unzip cygwin.zip to C:\Program Files (x86)\eyesim\cygwin
- Unzip Xming.zip to C:\Program Files (x86)\eyesim\Xming

Download and unzip eyesimX (EyeSim Examples)

Compiling Code - C

To compile code written in C use the following:

-   gccsim -o OUTPUT-FILENAME.x INPUT-FILENAME.c

Note that in windows, the cygwin terminal needs to be used for this to run without a error

Compiling Code - C++

To compile code written in C use the following:

-   g++sim -o OUTPUT-FILENAME.x INPUT-FILENAME.c

Note that in windows, the cygwin terminal needs to be used for this to run without a error

Running Your Code (C and C++)

Running compiled code on terminal:

- ./FILENAME

Note that on windows the cygwin terminal needs to be used to run the commands without errors
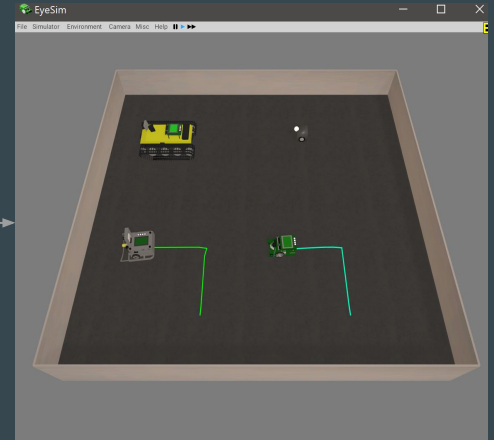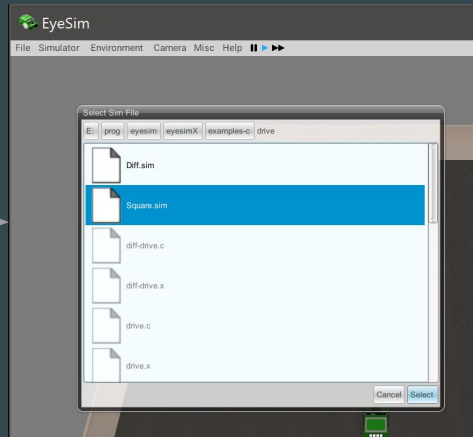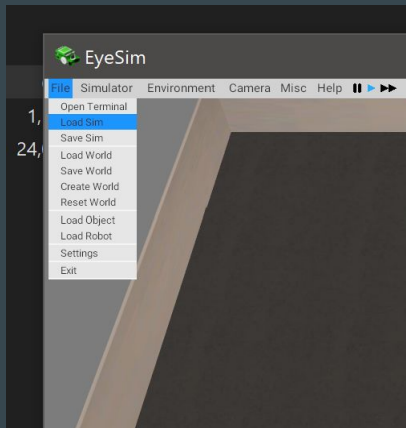
Running Simulation Files using terminal

.sim files (Linux/macOS) using terminal

- eyesim FILENAME.sim

There is currently a bug with cygwin on windows that does not allow for this method of execution, so please use the GUI method on the next slide

Running Simulation Files using GUI

- File > Load Sim
- Select the sim file to run
- The simulation file should run

Robotics Lab 1 - Lawn Mower

Lab Sheet: http://robotics.ee.uwa.edu.au/courses/robotics/labs/lab1-lawnmower.pdf

To prepare go through some of the example files located in "eyesimX/Examples-X/drive"

Turning on trails and sensor visualisation can be very useful for debugging. This is located in the Tab File>Settings>Visualisation

For C/C++ the Library Functions are located here: http://robotics.ee.uwa.edu.au/eyebot/Robios7.html

It is advised that you attempt the lab before coming to your respective lab sessions

Useful Resources

Unix Terminal Commands - http://mally.stanford.edu/~sr/computing/basic-unix.html

Courses:

- Python: https://www.codecademy.com/
- C: https://www.learn-c.org/ and
  https://alison.com/course/introduction-to-c-programming
- C++: https://www.codecademy.com/

Eyesim User Manual: http://robotics.ee.uwa.edu.au/eyesim/ftp/EyeSim-UserManual.pdf

Lab Information and Sheets

http://robotics.ee.uwa.edu.au/courses/robotics/

Lab Demonstrators

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