Boids Simulator in Nim

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Docs

Docs are available at docs/.

Getting started

Binaries / Executables

Some binaries may be available in the releases. Use at own risk.

Build from source

What needs to be installed: - Git - Nim version 1.6 or higher (primarily developed for 2.0) (`nim` and `nimble` need to be available and in the path) - Recommended to be installed through `choosenim`, but also in the package repos of many distros - nimraylib_now - It's a nim package that includes raylib and nim bindings - Can easily be installed through `nimble install nimraylib_now`)

Linux (probably also works for OSX and BSD) Download the source code:

```
git clone https://github.com/lrshsl/BoidsSimulator --branch hand_in_release
cd BoidsSimulator
```

Run using nimble:

```
nimble run
```

.. and hope it works!

The window shouldn't be resized while running. If different window dimensions are needed, the desired dimensions can be passed as arguments to the program.

```
nimble run -- 1000 800
```

Opimization options can be passed: `-d:release` for an optimized build or `-d:danger` for turning off even more checks to maximize performance (must be passed before the `--`)

```
nimble run -d:release -- 1000 800
```

Troubleshooting Due to dynamic links in the raylib source code, it may be necessary to get some C x11 headers on your system.

Apt based distros (Debian, Ubuntu and distros based on those):

```
sudo apt install libasound2-dev libx11-dev libxrandr-dev libxi-dev libgl1-mesa-dev libglu1-m
```

Pacman (Arch linux):

```
sudo pacman -S alsa-lib mesa libx11 libxrandr libxi libxcursor libxinerama
```

Else consult the raylib docs.

Windows

1. Get an empty usb-stick
2. Flash it with a linux distro
3. Boot from it
4. Install Linux
5. See chapter Linux ;)

Features

- ☒ Basic boids simulation
- ☒ Tunable parameters
  - Somehow tunable
    - ☒ Window dimensions
    - ☐ Colors
    - ☐ Settings
      - ☐ Starting values
      - ☐ Presets of parameter values
    - ☐ Size of entities
  - UI with instant reloading
    - ☒ Cohesion, align and separation factors
    - ☒ Number of entities
    - ☒ View radius
    - ☒ Speed (max and min)
    - ☒ Separation from the edges
    - ☒ Ui behaviour
- ☒ Fancy colors
- ☐ Optimizations

Current developement focus: - Documentation - Automatic screen size adaption
- Refactor code (comments and architecure)