

159.261 GAME PROGRAMMING (ASSIGNMENT 1)

Snakes Game

ADDED FEATURES

ADDED GAMEPLAY FEATURES

- Simple menu system
- Single player and two players support
- Application state machine: get ready, playing game, level complete, etc
- Apples that must be collected in sequence 1-9
- Snakes grow in length based on the Apple number
- 10 levels
- Game gets progressively faster
- Walls randomly inserted during the map
- Power ups

POWER UPS

What attributes does the game have?

- Speed
- Points
- Num Snakes
- Length

Power Ups

- Increase speed
- Decrease speed
- Increase points
- Decrease points
- Increase snakes
- Decrease snakes
- Decrease length
- Random

ADDED ENGINE FEATURES

- LWJGL integration
<https://github.com/LWJGL/lwjgl3>
<https://github.com/JOML-CI/JOML>
- OpenGL 4.5, with GLSL shaders
- Directional specular lighting
- Mix of 2D and 3D graphics
- Bullet3 integration
<https://github.com/stephengold/Libbulletjme>

ARCHITECTURE

DESIGN PATTERNS

Model-View-Controller (MVC)

<https://en.wikipedia.org/wiki/Model%E2%80%93view%E2%80%93controller>

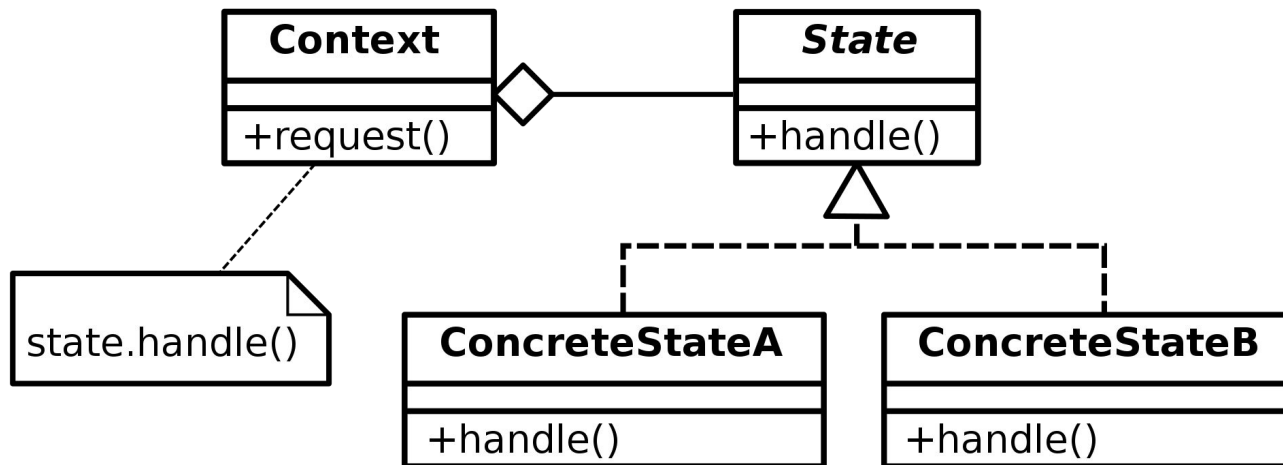
State Pattern

https://en.wikipedia.org/wiki/State_pattern

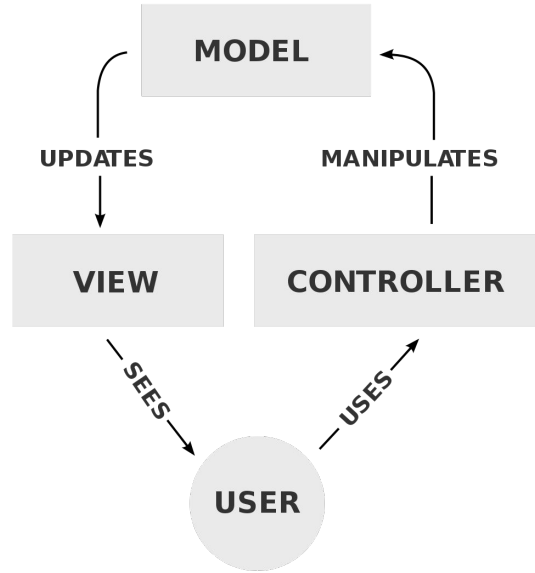
Separation of Concerns (SoC)

https://en.wikipedia.org/wiki/Separation_of_concerns

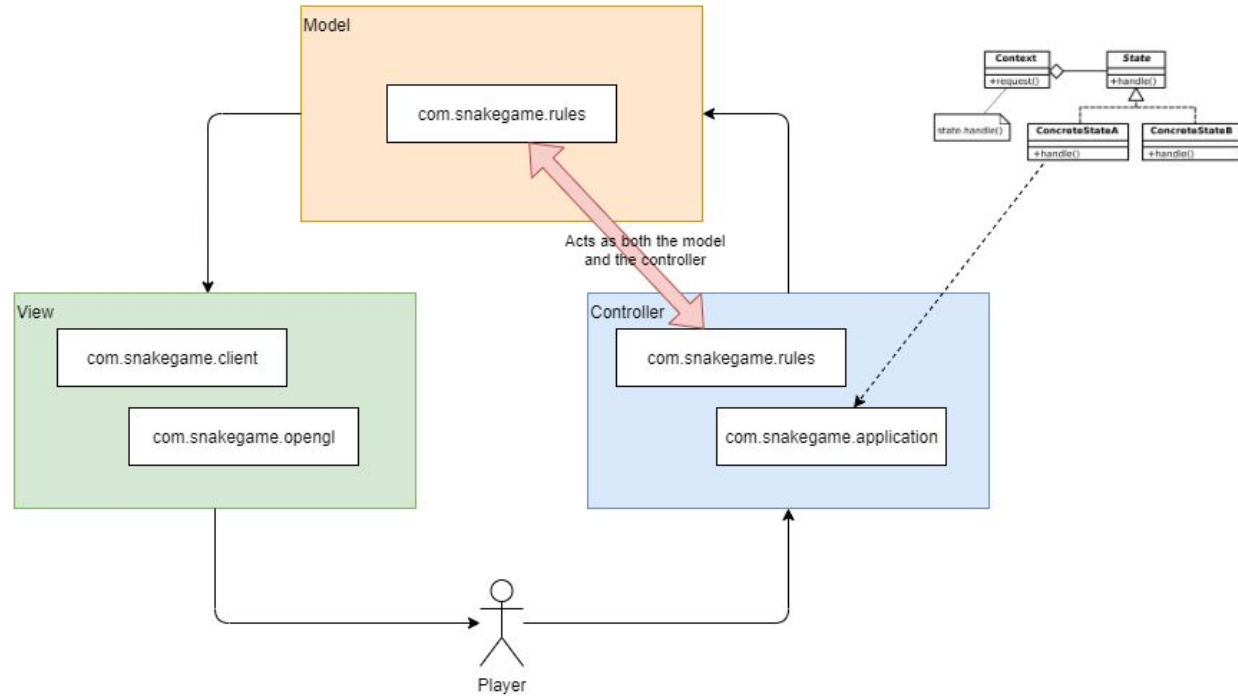
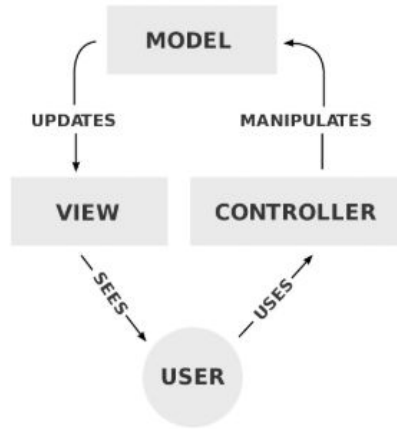
STATE PATTERN



MODEL-VIEW-CONTROLLER (MVC)



SEPARATION OF CONCERNS (SOC)



IMPROVEMENTS

- GLSL Shadow mapping
- Sound
- Music
- Level Editor

THANK YOU!

All source for this game is open.

<https://github.com/DamianCoventry/159.261-Game-Prog-Assgn1>

My other open source games

<https://github.com/DamianCoventry?tab=repositories>