

Group Bigfoot: Pac-man & API Design

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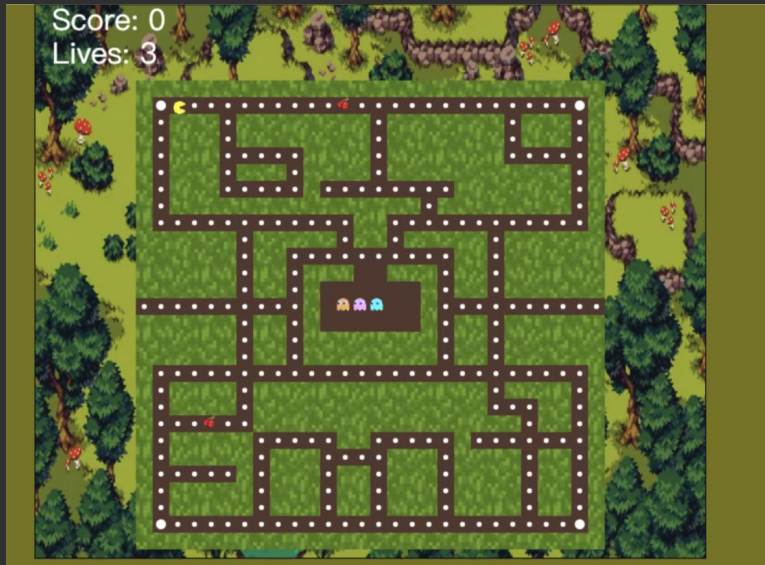
BigFoot's Chat App

Intro:

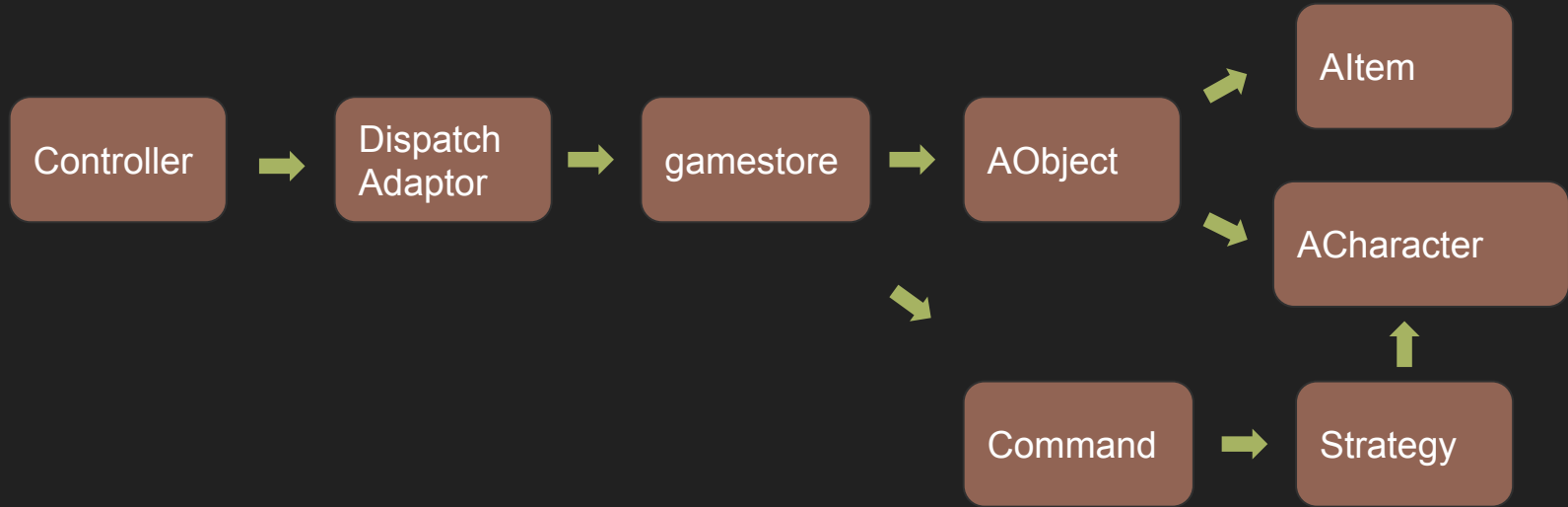
- Two game level, user can set levels
- Map design with big foot
- Extra point get from big foot icon like fruits
- Two behavior for ghosts

Up Next:

- Overview of the Technical details
- API End-points
- Demo



Structure Overview



GameStore

ACharacter

Altem

- Maintain the state of the entire pacman
- Work with ACharacter and Altem abstract classes to manage the update of pacman world
- Use 2D array to represent the map

Use cases

- Pacman / Ghost movement
- Pacman / Ghost interactions
- Pacman / items interaction
- Score / lives updated

UML

Update Strategy

Pac-man

- Move across the map given the arrow direction pressed by users
- Store the next direction so that it will turn once opportunity arises

Ghosts

- Two moving strategies
- Chase - aggressively chase pacman
- Random walk - move randomly across the map

UML



Design Pattern

Command pattern

ICharacterCmd

Update State

Interact with items

Singleton pattern

StrategyFactory

CmdFactory

Strategy pattern

IUpdateStrategy

Pacman

Ghosts

Factory pattern

StrategyFactory

CmdFactory



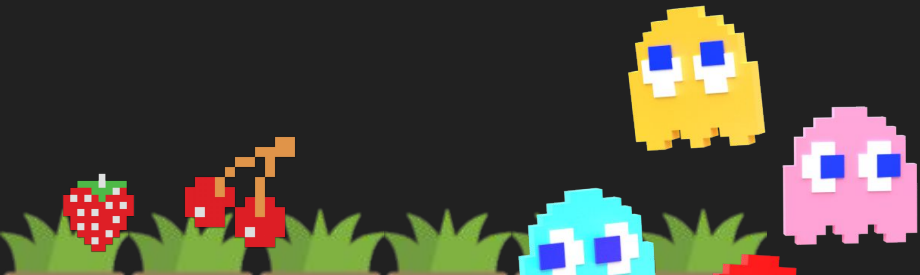
API endpoints

GET /initialize Initialize the pac-man world.

POST /update Update the pac-man world.

GET /clear Clear the pac-man world.

POST /setGameParameters Set the game parameters.



GUI Demo



<https://pacman-api-team-bigfoot.herokuapp.com/>



