

Team Rice Final Game

COMP 504 Group Project

Team Members & Roles

Team Name: Rice

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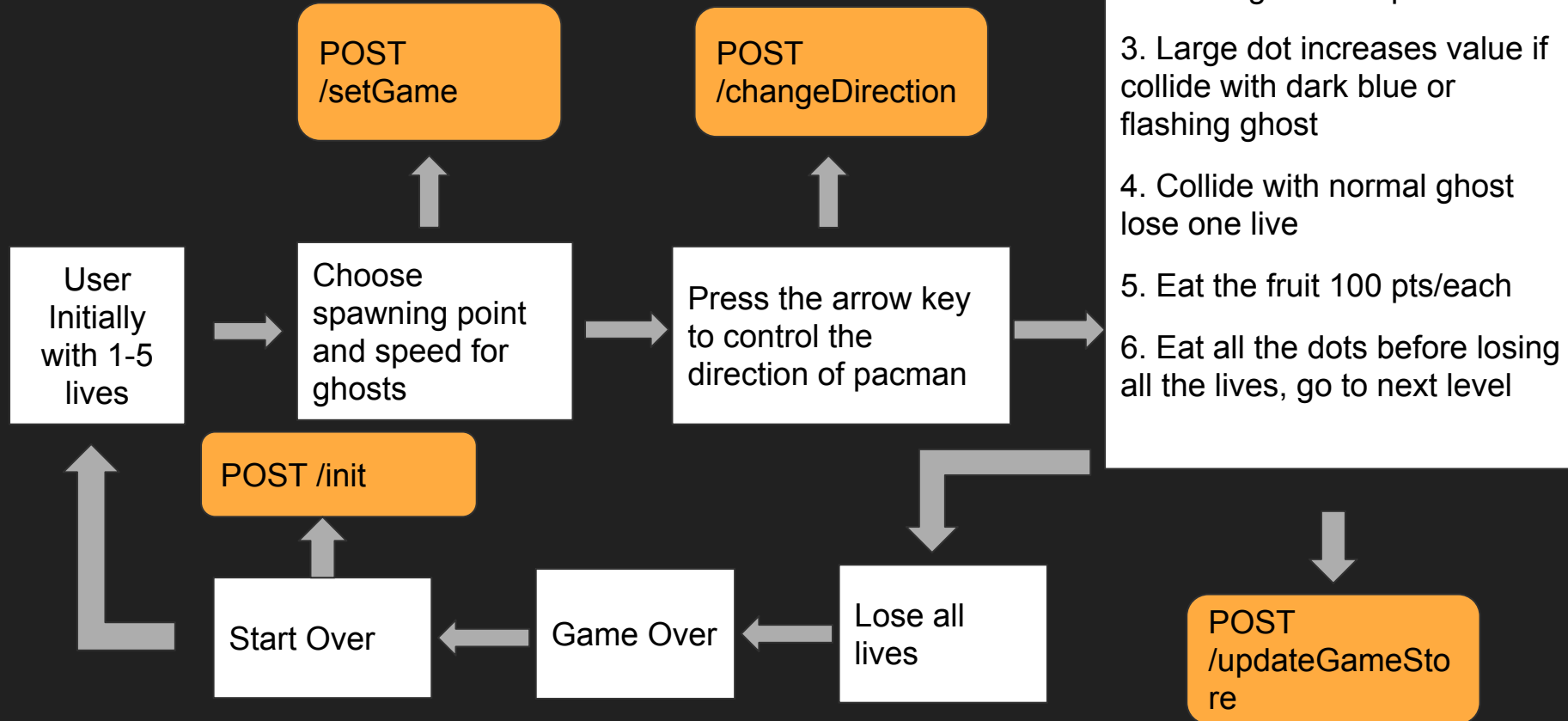
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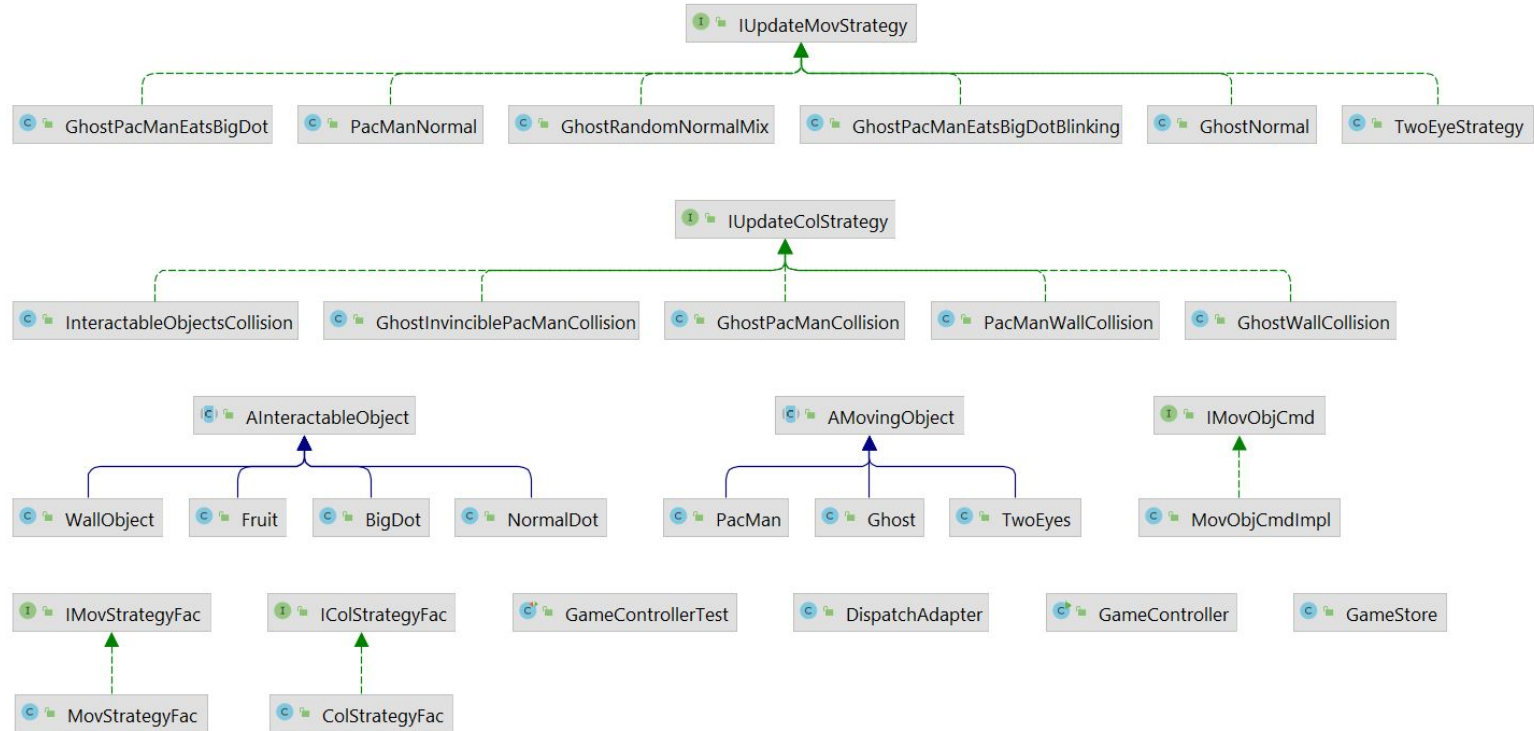
API's and Use Cases



Our Design Decisions

- User Extensibility Decisions:
 - User can select the starting point for pacman.
 - User can select the initial lives they have (1- 5).
 - User will have 3 lives by default
 - User can select the speed for Ghosts.
- 4 Ghosts , approx 240 Dots. and fruits appearing in interval of time.
- With each level the speed of Ghosts will increase.
- And Invincibility time decreases for Pac-Man.
- To Make game update more efficient we are using a Matrix Map to keep a track of game status.

UML Diagram



Ghost

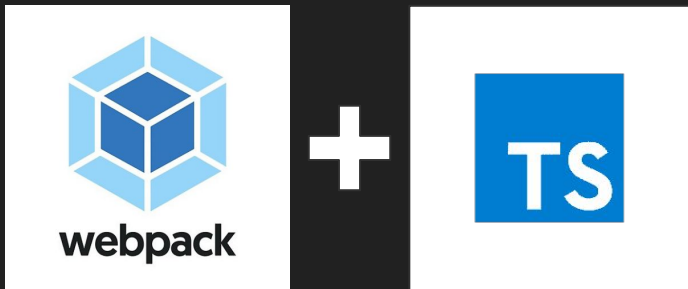
- Normal Strategy
 - Always goes the the direction towards Pac-man
- Random Strategy
 - Chose a random direction at intersection
- Composite Strategy
 - Combination of Normal Strategy and Random Strategy
- Two Eyes Strategy
 - Ghost becomes two eyes and moves toward the harbor directly
- Extensible feature for user to select the initial speed for Ghost.

Pacman

- PacMan works based on the user input.
- We update the pacman position for 8px per 0.1 second.
- We store the last key input and apply the direction change when the pacman is able to do that
- Use matrix for the gameboard to determine wall collision, PacMan eating normal dots , Big dots and Fruit.
- This helps us update the required strategies for Ghost and PacMan.

Front-End

Techniques



Game Class

```
1 export default class Game {
2   private lives: number = 3;
3   private ...
4
5   constructor() {}
6
7   async updateGameInfo() {}
8
9   async ...
10 }
```

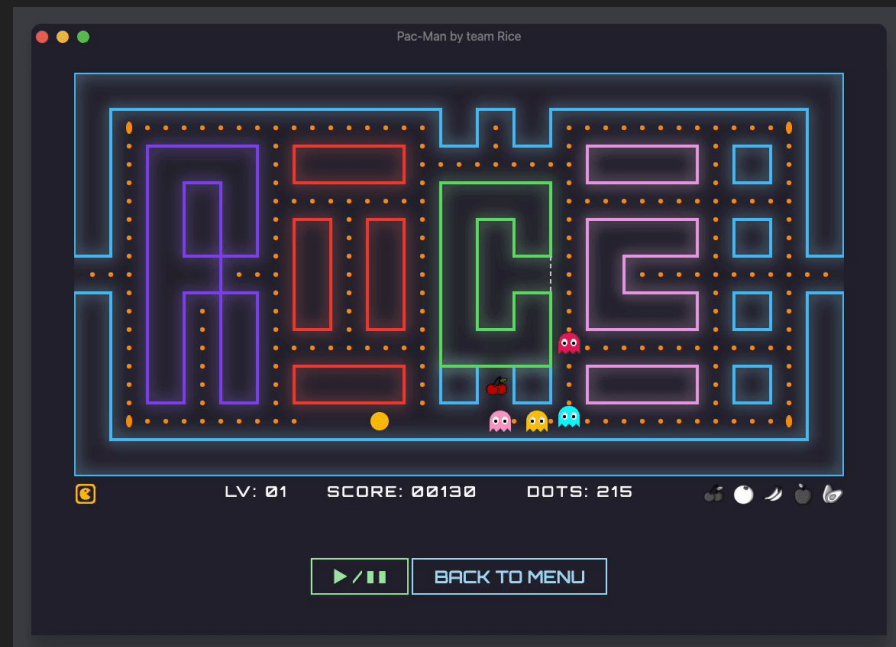
Canvas Functionalities

```
1 export const clear = (shouldDrawWalls?: boolean) => {}
2 export const drawWalls = () => {}
3 export const drawGhost = (x: number, y: number, type: GhostType, time?: number) => {}
4 export const drawPacMan = (x: number, y: number, direction: DIRECTIONS, time?: number) => {}
5 export const drawDot = (x: number, y: number, isBig?: boolean, time?: number) => {}
6 export const drawFruit = (x: number, y: number, type: string) => {}
```

Demo

Please visit <https://pacman-final-team-rice.herokuapp.com/> to view our projects

In Case You Missed It...



Q&A

Feel free to ask us any questions