Assignments

Maze

Setup

1. Go to the folder `./assignments/1_maze/`
2. Run `npm run start:dev`
3. Open `http://localhost:8080` in the browser

Todo

Create a small game where a player has to go through a maze.

Requirements

- The maze is awlays a square. And consists of N amount of squares.
- Each square has one of three type (0: Empty / 1: Obstacle / 2: Finish).
- The player cannot be on the same square as an obstacle.
- The player can only move a limited amount of time.
- The player can move up/down/left/right but only within the canvas frame.
- If the player is on the finish square the round is finished.

The following class diagram serves as an outline on how the game could be implemented.

Game

canvas: HTMLCanvasElement

ctx: CanvasRenderingContext2D

levelId: INT

level: Level

maze: Maze

player: Player

isDone: BOOLEAN

movesLeft: INT

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constructor(INT): VOID

init(INT): VOID

bindEvents(): VOID

onKeyPress(Event): VOID

lost(): VOID

won(): VOID

draw(): VOID

Level

name: STRING

moves: INT

playerStartPosition: Vector

mapData: Array<Array<INT>>

Vector

x: INT

y: INT

Player

position: vector

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draw(CanvasRenderingContext2D)

Maze

width: INT

height: INT

mapData: Array

blockSize: INT

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draw(CanvasRenderingContext2D)

isNextPositionValid(Vector): BOOLEAN

isNextPositionFinish(Vector): BOOLEAN