MazeGame UML Class Diagram

Game
- start_time: time_point
- m_isGameOver: bool
- m_pStateMachine: GameStateMachine

+ Game()
+ Initialize()
+ RunGameLoop()
+ GetInputLoop()
+ Deinitialize()
- Update()
- Draw()
- GetInput()

StateMachineExampleGame
+ m_pOwner: Game
+ m_pCurrentState: GameState
+ m_pNewState: GameState

+ StateMachineExampleGame()
+ Init()
+ UpdateCurrentState()
+ DrawCurrentState()
+ ChangeState()
+ CleanUp()
+ LoadScene()
+ GetInputFromState()

«interface» GameState
+ ~GameState()
+ Enter()
+ Update()
+ Draw()
+ Exit()
+ GetInput()

GameplayState
- m_pOwner: StateMachineExampleGame
- m_player: Player
- m_pLevel: Level
- m_beatLevel: bool
- m_skipFrameCount: int
- kFramesToSkip: static constexpr int
- m_currentLevel: int
- m_levelNames: std::vector<std::String>
- m_input: int

+ GameplayState()
+ ~GameplayState()
+ Enter()
+ Update()
+ Draw()
+ GetInput()
- Load()
- HandleCollision()
- DrawHUD()

Level
- m_pLevelData: char*
- m_height: int
- m_width: int
- m_pActors: std::vector<PlacableActor>
+ WAL: static constexpr char

+ Level()
+ ~Level()
+ Load()
+ Draw()
+ UpdateActors()
+ IsSpace()
+ IsWall()
+ GetHeight()
+ GetWidth()
+ DisplayTopBorder()
+ DisplayBottomBorder()
+ DisplayLeftBorder()
+ DisplayRightBorder()
- Convert()
- GetIndexFromCoordinates()

PlacableActor
m_pPosition: Point
m_isActive: bool
m_color: ActorColor

+ PlacableActor()
+ ~PlacableActor()
+ GetXPosition()
+ GetYPosition()
+ GetXPositionPointer()
+ GetYPositionPointer()
+ SetPosition()
+ GetColor()
+ Remove()
+ IsActive()
+ Place()
+ GetType() virtual

«enumeration» ActorColor
Regular
Blue
Green
Red
SolidGreen
SolidRed
SolidBue

«enumeration» ActorType
Door
Enemy
Goal
Key
Money
Player

«interface» GameStateMachine
+ ~GameStateMachine()
+ Init()
+ UpdateCurrentState()
+ DrawCurrentState()
+ ChangeState()
+ Cleanup
+ GetInputFromState()

LoseState
- m_pOwner: StateMachineExampleGame

+ LoseState()
+ ~LoseState()
+ Update()
+ Draw()

WinState
- m_pOwner: StateMachineExampleGame

+ WinState()
+ ~WinState()
+ Update()
+ Draw()

«enumeration» SceneName
None
MainMenu
GamePlay
Settings
HighScores
Lose
Win

MainMenuState
- m_pOwner: StateMachineExampleGame
- m_input: int

+ MainMenuState()
+ ~MainMenuState()
+ Update()
+ Draw()
+ GetInput()

HighScoreState
- m_pOwner: StateMachineExampleGame
- m_HighsScores: std::set<int>
- m_input: int

+ HighScoreState()
+ ~HighScoreState()
+ Update()
+ Draw()
+ GetInput()

SettingsState
- m_pOwner: StateMachineExampleGame
- m_input: int

+ SettingsState()
+ ~SettingsState()
+ Update()
+ Draw()
+ GetInput()

Player
- m_pCurrentKey: Key
- m_money: int
- m_lives: int

+ Player()
+ Draw()
+ GetType()
+ HasKey()
+ PickupKey()
+ UseKey()
+ DropKey()
+ GetKey()
+ AddMoney()
+ GetMoney()
+ GetLives()
+ DecrementLives()

Key
+ Key()
+ Draw()
+ GetType()

Goal
+ Goal()
+ Draw()
+ GetType()

Door
- m_isOpen: bool
- m_closedColor: ActorColor

+ Door()
+ Draw()
+ GetType()
+ IsOpen()
+ Open

Money
- m_worth: int

+ Money()
+ Draw()
+ GetType()
+ GetWorth()

Enemy
- m_movementInX: int
- m_movementInY: int
- m_currentMovementX: int
- m_currentMovementY: int
- m_directionX: int
- m_directionY: int

- UpdateDirection()
+ Draw()
+ Enemy()
+ GetType()
+ Update()