

## Classes/Components

- Main

Basic loop conditions

- Game not over and agent alive
- Player chooses action
  - Based on action event occurs
  - Update fields based on event
- Player wins or dies

- GameEngine

Fields:

- Spy spy
- Ninja[] ninjas
- Pickup[]
- Grid grid
- Int spyLives = 3

Methods:

Boolean isGameOver()

Boolean isPlayerDead()

Int[] getBriefcaseLocation() Retrieves briefcase location from Grid

Int[] getNinjaLocation() Retrieves ninja location from Grid

Int[] getSpyLocation() Retrieves spy location from Grid

Int[] setNinjaLocation() Sets ninja location explicitly to Grid

Int[] setSpyLocation() Sets spy location explicitly to Grid

Int[] setBriefcaseLocation() Sets briefcase location explicitly to Grid

Void resetSpyLocation() return the spy to the starting position on the Grid

Void pickUpPowerUp() evaluates which powerup, respective action taken

Void debugMode() enables debug mode

- UI

- All text dialogue printed here
- The design of the grid display
- The main menu + user input (Save, quit, shoot.....)

Methods:

Void displayMainMenu()

Void displayGrid()

Void displayStats()

Void displayWin()

Void displayGameOver()

Void saveGame() saves the game to file

Void loadGameSave() loads game save from file

- Spy (Starts at bottom left most spot, 3 lives)

- Fields
  - int lives

- boolean hasBullet
  - invincibility
- Methods
  - Shoot
  - Look
  - Move
- Ninja ( 6 randomly spawned at least 3 spots away from spy)
  - Fields:
    - Row
    - Column
  - Methods
    - Move
- Grid (81 squares 9x9)
  - Rooms (9 on the grid, one contains the briefcase, can only be accessed from the top)
  - Power ups and briefcase are placed randomly on the grid
- Room ( 9 in grid, one contains briefcase, accessed only from top)
  - Fields
    - boolean hasBriefcase
- PickUps (Additional Bullet, Invincibility, Radar)
  - Fields
    - Location
    - isActiveOnGrid
  - Methods
    - useAbility()