<<interface>>
Game

+ getInfoOf(name: String): String
+ getNeighboursOf(name:String): String
+ moveTarget(): void

GameImpl

- instance : Game

- name: String
- target: Character
- layout: Layout
- characterMap: Map<String, Integer>

+ getInstance(): Game

- GameImpl(configFile: File)
+ getSpaceInfo(name: String): String
+ getNeighboursOf(name:String): String
+ moveTarget()
+ getTargetPosition(): int

<<interface>>
Character

+ move()
+ getPosition() : int

AbstractCharacter

name: String
position: int

move()
+ getPosition() : int

Target

- damage:int

+ move()
+ getDamage(): int

<<interface>>
Layout

+ Layout(configFile: File)
+ getNeighboursOf(name: String): String
+ getSpaceInfo(name:String): String

Layout

- grid: Unit [ ][ ]
- NUMBER_OF_ROWS:int
- NUMBER_OF_COLUMNS:int
- spaces:Map<String, Space>

+ Layout(configFile: File)
+ getNeighboursOf(name: String):String
+ getSpaceInfo(name: String): String
- populateGrid()
- mapNeighboursToSpaces()
- isValidSpace(space: Space): boolean
- isValidItem(item: Item): boolean
- isTotalItemDamageSufficientForTarget(): boolean
- isValidAdjacentUnit(): boolean

Unit

- row:int
-col:int
-spaceIndex:int = null

+ Unit(row, col, index):void

<<interface>>
Space

+ addNeighbour(space: Space)
+ addItem(name: String, damager int)
+ getNeighbours(): Map<String, Space>

Space

- name:String
- index:int
- topLeftX : int
- topLeftY: int
- bottomRightX:int
- bottomRightY: int
- neighbours:Map<String, Space>
- items: Map<String, Item>

+ getInformation(): String
+ getNeighbours(): List<Space>
+ addNeighbour(space: Space)
+ addItem(name: String, damager int)
+ toString(): String

<<interface>>
Item

+ getDamage() : int
+ getPosition() : int

Item

-name:String
-position:int

+ getDamage() : int
+ getPosition() : int
+ toString(): int

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1   1   1   20..*   1   0..*

Test Suite for Milestone1 – The World

File validFile = new File(validFile.txt)

File invalidFile = new File(invalidFile.txt)

Contents of validFile.txt
4 5 MyWorld
20 Demon
20
0 0 1 1 Space-1
1 0 1 2 Space-2
2 0 1 3 Space-3
3 0 1 4 Space-4
4 0 1 5 Space-5
1 0 2 1 Space-6
1 1 2 2 Space-7
1 2 2 3 Space-8
1 3 2 4Space-9
1 4 2 5 Space-10
2 0 3 1 Space-11
2 1 3 2 Space-12
2 2 3 3 Space-13
2 3 3 4 Space-14
2 4 3 5 Space-15
3 0 4 1 Space-16
3 1 4 2 Space-17
3 2 4 3 Space-18
3 3 4 4 Space-19
3 4 4 5 Space-20
20
0 1 Item-1
1 1 Item-2
2 1 Item-3
3 1 Item-4
4 1 Item-5
5 1 Item-6
6 1 Item-7
7 1 Item-8
8 1 Item-9
9 1 Item-10
10 1 Item-11
11 1 Item-12
12 1 Item-13
13 1 Item-14
14 1 Item-15
15 1 Item-16
16 1 Item-17
17 1 Item-18
18 1 Item-19
19 1 Item-20

Contents of validFile.txt
4 -5 MyWorld
20 Demon
16
0 0 1 1 Space-1
1 0 1 2 Space-2
2 0 1 3 Space-3
3 0 1 4 Space-4
4 0 1 5 Space-5
1 0 2 1 Space-6
0 0 1 1 Space-7
1 2 2 3 Space-7
1 3 2 4Space-9
1 4 2 5 Space-10
2 0 3 1 Space-11
2 1 3 2 Space-12
2 2 3 3 Space-13
2 3 3 4 Space-14
2 4 3 5 Space-15
3 0 4 1 Space-16
12
0 1 Item-1
1 1 Item-2
2 1 Item-3
3 1 Item-4
4 1 Item-5
5 1 Item-6
6 1 Item-7
7 1 Item-8
8 1 Item-9
9 1 Item-10
10 1 Item-11
11 1 Item-12

Testing Construction	Input	Expected Value
Construction with valid file	Game(validFile)	MyWorld, 4, 5, Demon
Constructor with negative rows and cols	Game(inValidFile)	IllegalArgumentException
Constructor with zero rows and cols	Game(inValidFile)	IllegalArgumentException
Constructor with space less than 20	Game(inValidFile)	IllegalArgumentException
Constructor with negative coordinates for spaces	Game(inValidFile)	IllegalArgumentException
Constructor with overlapping spaces	Game(inValidFile)	IllegalArgumentException
Constructor without space name	Game(inValidFile)	IllegalArgumentException
Constructor with duplicate space name	Game(inValidFile)	IllegalArgumentException
Constructor with negative damage for Target character	Game(inValidFile)	IllegalArgumentException
Constructor without Target name	Game(inValidFile)	IllegalArgumentException
Constructor with Item invalid space index	Game(inValidFile)	IllegalArgumentException
Constructor with items less than 20	Game(inValidFile)	IllegalArgumentException
Constructor with negative damage for item	Game(inValidFile)	IllegalArgumentException
Constructor with zero damage for item	Game(inValidFile)	IllegalArgumentException
Constructor without item name	Game(inValidFile)	IllegalArgumentException
Constructor with total item damage less than Target damage	Game(inValidFile)	IllegalArgumentException

Testing getSpaceInfo()	Input	Space	Expected Value
Existing Space	Game(validFile)	Space-1	Name: Space-1 TopLeft : (0,0) BottomRight : (1,1) Items : Item1 Neighbours : Space-2,Space-6
Space not in the layout	Game(validFile)	Space-30	IllegalArgumentException

Testing getNeighboursOf()	Input	Space	Expected Value
Space in the layout	Game(validFile)	Space-6	Space-7, Space-11
Space not in the layout	Game(validFile)	Space-50	IllegalArgumentException

Testing moveTarget()	Input	Expected Value
Move Target from initial space	Game(validFile)	1
Move Target from last Space	Game(validFile)	0