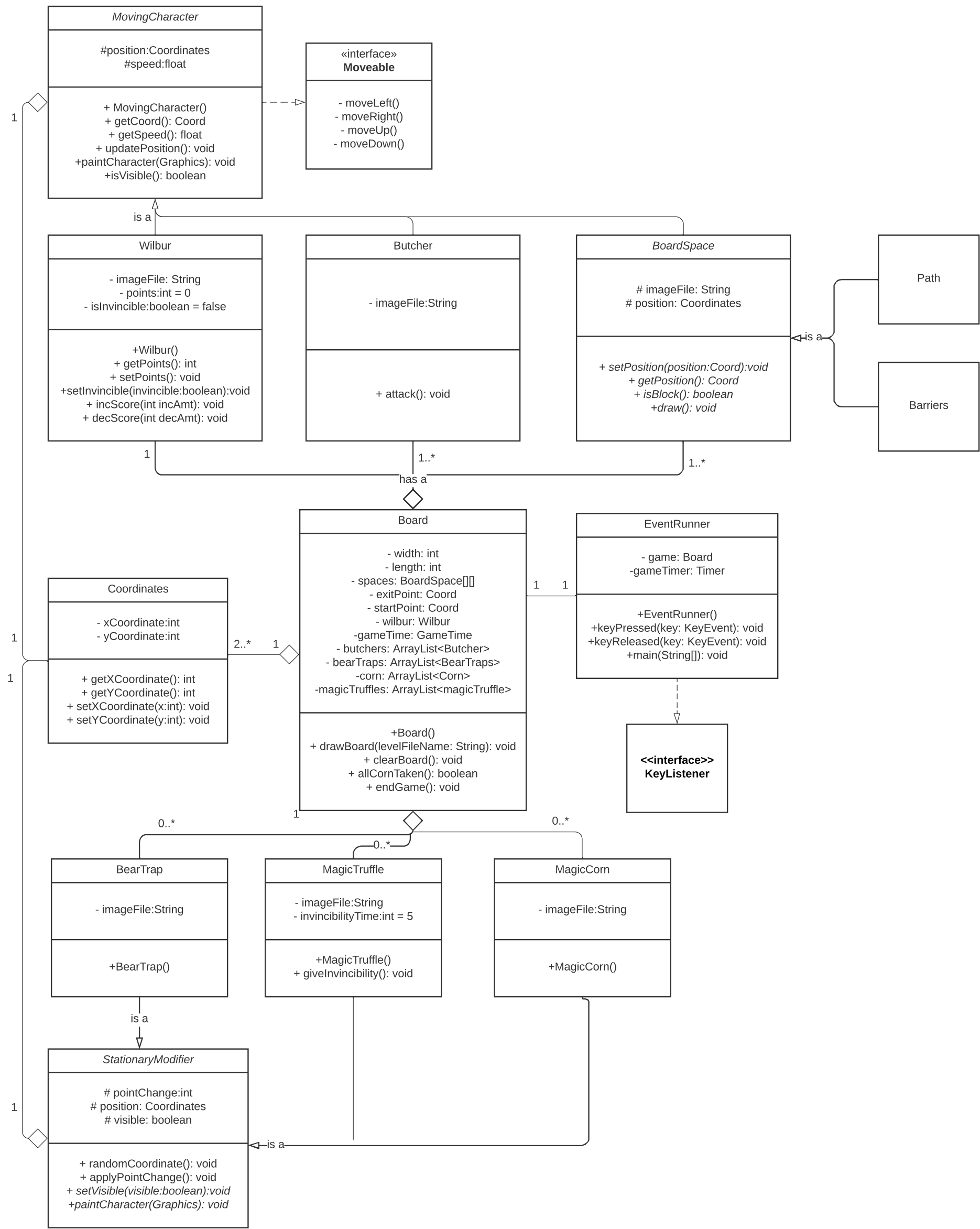**Class Diagram**

Package structure

MovingCharacter
#position:Coordinates
#speed:float

+ MovingCharacter()
+ getCoord(): Coord
+ getSpeed(): float
+ updatePosition(): void
+paintCharacter(Graphics): void
+isVisible(): boolean

«interface» Moveable
- moveLeft()
- moveRight()
- moveUp()
- moveDown()

is a

Wilbur
- imageFile: String
- points:int = 0
- isInvincible:boolean = false

+Wilbur()
+ getPoints(): int
+ setPoints(): void
+setInvincible(invincible:boolean):void
+ incScore(int incAmt): void
+ decScore(int decAmt): void

Butcher
- imageFile:String

+ attack(): void

BoardSpace
imageFile: String
position: Coordinates

+ setPosition(position:Coord):void
+ getPosition(): Coord
+ isBlock(): boolean
+draw(): void

is a

Path

Barriers

1..*

has a

1..*

Coordinates
- xCoordinate:int
- yCoordinate:int

+ getXCoordinate(): int
+ getYCoordinate(): int
+ setXCoordinate(x:int): void
+ setYCoordinate(y:int): void

2..*   1

Board
- width: int
- length: int
- spaces: BoardSpace[][]
- exitPoint: Coord
- startPoint: Coord
- wilbur: Wilbur
-gameTime: GameTime
- butchers: ArrayList<Butcher>
- bearTraps: ArrayList<BearTraps>
-corn: ArrayList<Corn>
-magicTruffles: ArrayList<magicTruffle>

+Board()
+ drawBoard(levelFileName: String): void
+ clearBoard(): void
+ allCornTaken(): boolean
+ endGame(): void

EventRunner
- game: Board
-gameTimer: Timer

+EventRunner()
+keyPressed(key: KeyEvent): void
+keyReleased(key: KeyEvent): void
+main(String[]): void

1   1

<<interface>> KeyListener

0..*

0..*

0..*

BearTrap
- imageFile:String

+BearTrap()

MagicTruffle
- imageFile:String
- invincibilityTime:int = 5

+MagicTruffle()
+ giveInvincibility(): void

MagicCorn
- imageFile:String

+MagicCorn()

is a

StationaryModifier
pointChange:int
position: Coordinates
visible: boolean

+ randomCoordinate(): void
+ applyPointChange(): void
+ setVisible(visible:boolean):void
+paintCharacter(Graphics): void

is a

Package structure

Characters
+Wilbur
+Butcher

Although the witch is a character in our story, she does not need to be an object in our class structure, since she is non-functional.

She could just be an enviroment variable? Like just for decoration

Enviroment
+Path
+Barriers
+BearTrap
+MagicTruffle
+MagicCorn

Game Mechanics
+Coordinates
+EventRunner
+MovingCharacter
+BoardSpace
+Board