Game Description:

Category: Racer
Subcategory: Simulation
Genre: African
Design Pattern: Object Pool

The game I have chosen to make will involve the simulation of a minibus taxi picking up passengers. The game will involve a 2D plane with two lanes (road lanes). The game involves the main character, being a taxi, evading the police and picking up passengers. The police will consistently pursue the player, every time the player picks up a passenger, or goes over a hazard, namely a pothole, the player character slows down, allowing the pursuing police to get close. The player character will slow down when dropping off passengers. The taxi will have multiple upgrades available to be purchased with accumulated points to complete the game.

Game Rules and Conditions:

The objective of the game is to pick up Passengers and evade the police. The win condition involves not getting caught by the pursuing police as well as the collection and drop off of 100 passengers.
The police are constantly following the player character. The taxi has upgradable capacity for passengers, better wheels to withstand potholes, an upgradable engine and potentially more.

The taxi can stop to let out passengers, the player will have to manually press a button to move passengers out faster.

You lose by getting caught by the police.

The obvious objective is to evade the police and beat the game by purchasing all of the upgrades and reaching the end.

Sprite
- #x: int
- #y: int
- #width: double
- #xSpeed: int
- #ySpeed: int
- #myBound: BoundBox
- #myImage: Image
- #myImageView: ImageView
- +Sprite(x:int,y:int,width:double,height:double)
- +setPosition(x:int,y:int): void
- +setSpeed(x:int,y:int): void
- +intersects(Sprite:other): boolean
- +setImage(image:Image): void
- +getImage():Image : void
- +getBoundary(): BoundBox
- +accept(visitor:Visitor): void

Acceptor <<interface>>
- +accept(visitor:Visitor): void

GameVisitor
- +visit(taxi:Taxi): void
- +visit(passenger:Passenger): void
- +visit(sign:Sign): void
- +visit(pothole:Pothole): void
- +visit(road:Road): void

Visitor <<interface>>
- +visit(taxi:Taxi): void
- +visit(passenger:Passenger): void
- +visit(sign:Sign): void
- +visit(pothole:Pothole): void
- +visit(road:Road): void

Inputting <<final>>
- -img: static ImageView
- -Inputting()
- +setImageView(i:ImageView): static void
- +processKeyPress(event:KeyEvent): static void

Settings
- +SCENE_WIDTH: static double = 1080
- +SCENE_HEIGHT: static double = 720

GameCanvas
- -ArrayList<Sprite>
- +redraw(gc:GraphicsContext): void

PassengerPool <<Object Pool>>
- -instance: PassengerPool = null
- -passengers: ArrayList<Passenger>
- -PassengerPool()
- +getInstance(): static PassengerPool
- +acquirePassenger(): Passenger
- +releasePassenger(p:Passenger): void

Passenger
- +Passenger(x:int,y:int,width:double,height:double)
- +accept(visitor:Visitor): void

Taxi
- +Taxi(x:int,y:int,width:double,height:double)
- +accept(visitor:Visitor): void

Road
- +Road(x:int,y:int,width:double,height:double)
- +accept(visitor:Visitor): void

Pothole
- +Pothole(x:int,y:int,width:double,height:double)
- +accept(visitor:Visitor): void

Sign
- -myType: ESign
- +Sign(x:int,y:int,width:double,height:double)
- +accept(visitor:Visitor): void

BoundBox
- -width: double
- -height: double
- +BoundBox(width:double,height:double,x:int,y:int)
- +intersects(other:BoundBox): boolean

ESign <<Enumeration>>
- TAXI_STOP
- TAXI_START