PinBall

Design Diagram
By Gavin McGuire

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                    ┌──────────┐
                    │   Main   │
                    └────┬─────┘
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                         ▼
                    ┌──────────┐
                    │ GameLoop │
                    └────┬─────┘
        ┌────────────┬───┴────┬──────────────┐
        ▼            ▼        ▼              ▼
    ┌───────┐   ┌───────┐ ┌───────┐    ┌─────────┐
    │ Ball  │   │ Board │ │ Score │    │ Display │
    └───────┘   └───┬───┘ └───────┘    └─────────┘
                    │
                    ▼
                ┌───────┐
                │ Tile  │
                └───────┘
```
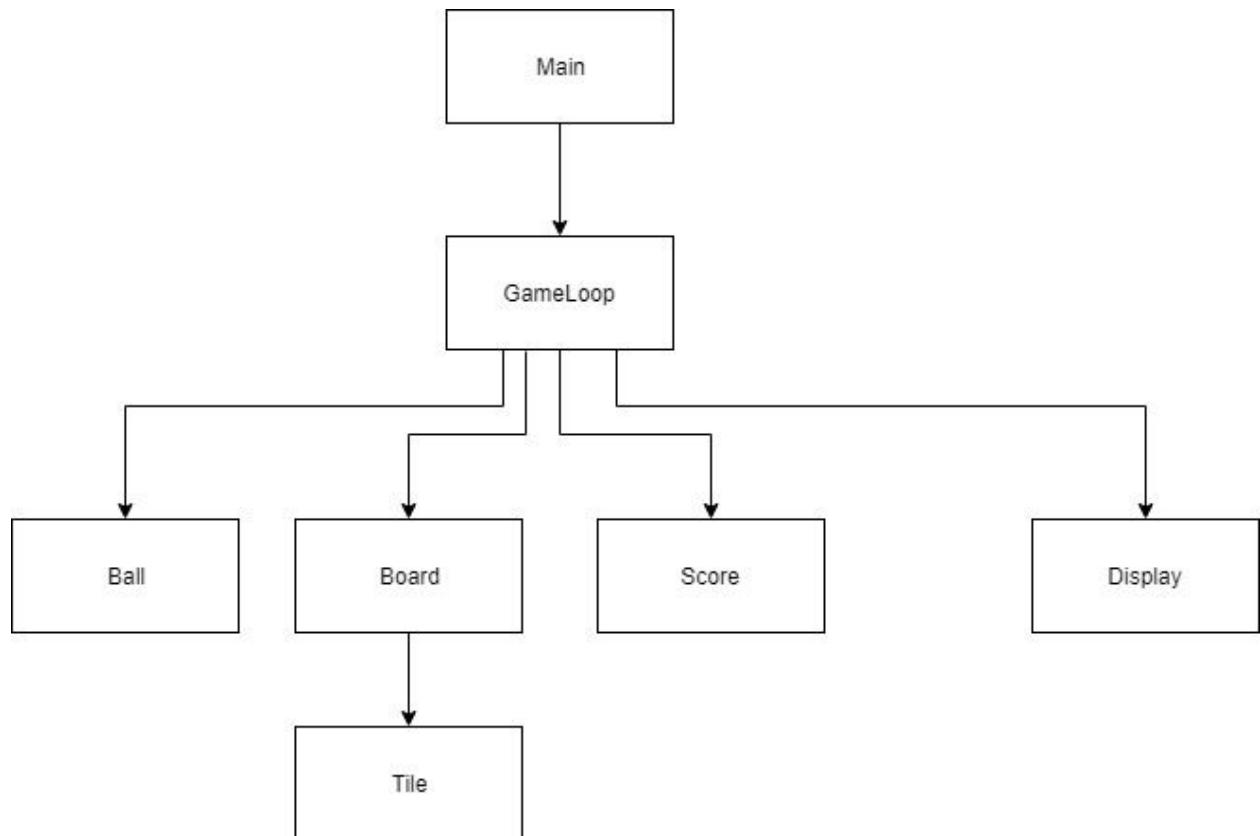
- Main - The program is booted from this class. It extends JavaFX Application. It Initiates the GameLoop Object. Uses GameLoops Displays layout to initialize the Scene.

- GameLoop - Contains all the game components - Ball, Board, and Score - contains the Display class, the user input methods, and an AnimationTimer.
  - The AnimationTimer updates the Ball position, detects if a target is hit, and resets the game if the ball missed 3 times.
  - The reset method calls reset methods in Ball, Board, and Score, and stops the Animation Timer.
  - The play method launches the ball and starts the timer
  - The event handlers attached to the Display buttons are set to call the reset and play methods mentioned previously

- Ball - contains a position and speed, fires the ball at a random angle, and has collision detection.

- Board - contains the Tiles and targets. Detects if the ball is on a target, and resets the targets.

- Tile - contains a position and can be a target.

- Score - keeps track of the points, can increment by 100, and reset.

- Display- contains the Javafx components to display the Board and Ball, and can update the positions and Tile state. Contains the "reset" and "play" buttons at the bottom.