Classes in the class Diagram

**Model**

**BuildModel:**  
This is the class that deals with the game when it’s in build mode. It contains methods for placing, moving, deleting and rotating gizmos as well as a method for switching to run mode.

**RunModel:**  
This is the class that deals with the game when it’s in run mode. This contains the ball on the board, the outer walls and the gizmos on the board. It has methods for moving the ball, predicting the balls movement in each time, checking the time until the next collision (and velocity) with another object, returning the ball in play, returning the gizmos and a method for switching to build mode.

**MCollisionDetails:**  
This calculated the time until the next collision and the velocity of the ball during the next collision. Has getters for both time until next collision and velocity.

**Gizmo:**  
Gizmo is the parent class for all the possible gizmos (excluding the ball) and contains the basic values needed for each gizmo; x and y position and colour. The methods it has are just getters and setters for the x and y positions and a getter for the colour.

**MTriangleGiz:**  
This is a triangle gizmo and extends Gizmo.

**MCircleGiz:**  
This is a circle gizmo and extends Gizmo.

**MFlipperGiz:**  
This is a flipper gizmo and extends Gizmo. It also contains whether the flipper is a left or right flipper.

**MSquareGiz:**  
This is a square gizmo and extends Gizmo.

**MBall:**  
This is the class for the ball. It contains the values for the balls velocity, its radius, x position, y position, colour and if the ball is stopped or not. It has get methods for the velocity, radius, circle, x and y values and the colour. It has set methods for the velocity and the x and y position. It also has methods to start and stop the ball and to check if the ball is stopped.

**MWalls:**  
This is a class for the outer walls of the board.

**View**

**GBallView:**  
This is the main class of the view and sets up all the other sections of the view. It contains the user interface for run mode and build mode, each button in build mode, each button in run mode, and the general button, it contains separate menu bars for both run and build mode, and the general menu bar and it also holds the model. It has a method for creating the build mode gui, one for creating the run mode gui and a method for build mode?

**VBuildGui:**  
This is the user interface for build mode. Extends VGBallGUI.

**VRunGui:**  
This is the user interface for run mode. Extends VGBallGui.

**VGBallGui:**  
This is the basic gui used in both build mode and run mode. It has methods that create the buttons, menu bar and message field.

**VBuildBoard:**  
This is the board (playable area) that is used for build mode. Extends VBoard.

**VRunBoard:**   
This is the board (playable area) that is used for run mode. Extends VBoard.

**VBoard**  
This is the basic gui for the build and run mode boards.

**Controller**

**BuildComboListener:**

**GBallListener:**

**MagicKeyListener:**

**GizBuildKeyListener:**

**MoveGizmoListener:**   
Used to run the method that allows users to move gizmos.

**ConnectGizmoListener:**   
Used to run the method that allows users to connect gizmos to actions.

**GizmoKeyListener:**

**PlayListener:**Used to call the method that starts the game when the user selects play game.

**DeleteGizmoListener:**Used to run the method that allows users to delete gizmos.

**GizRunKeyListener:**

**RotateGizmoListener:**Used to run the method that allows users to rotate gizmos.

**DoNothingKeyListener:**

**KeyConnectGizmoListener:**

**GBallListener:**The basic class for both build and run listeners.

**BuildListener:**Extends GBallListener.

**RunListener:**Extends GBallListener.

**MouseInputListener:**The basic class to detect when the mouse is used.

**AddAbsorberListener:**Extends MouseInputListener

**AddGizmoListener:**Extends MouseInputListener

**AddLeftFlipperListener:**Extends MouseInputListener

**AddRightFlipperListener:**Extends MouseInputListener

**AddBallListener:**Extends MouseInputListener