Pinball’s Return

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The goal of this project is to make an entertaining game of pinball using MATLAB. This could ideally replace the Pinball game that was removed from Windows Vista and later. The game should be fun to play as well as challenging.

At its most basic level, this game will involve tracking ball of a certain radius as it moves around a predefined board. There will be some downward acceleration pulling the ball towards the bottom of the field, so the kinematics of the ball will have to be calculated repeatedly. Any collisions between the ball and a game piece will be factored into the motion of the ball.

A GUI will also be created to allow user inputs and to actually display the game. This will involve receiving keyboard input and updating the position of the flippers to match. The GUI will also keep track of the score and number of remaining balls. An options panel could be used to change game properties such as the incline angle of the game board.

Besides smoothly tracking and updating the kinematics of the ball, as well as calculating bounce angles for walls that are not purely horizontal or vertical, another challenging part of this project will be modeling collisions with the flippers. These “walls” are moving so they will impart some extra momentum on the ball. The amount of extra momentum will depend on the contact location on the flipper and how fast that point on the flipper is moving.

I think the projected difficulty range for this project is 40 – 80, depending on how detailed and complex the gameplay is.