A screenshot of a cell phone

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Description automatically generatedMy project for 15-112 implements an interactive drawing game, where the user draws shapes on the screen in an attempt to solve physics challenges/puzzles. The shapes drawn by the user are then converted to actual objects with masses and physical properties such as gravity, collision, magnetic force, friction…etc. This process happens once the user releases the button while drawing. The drawn objects then are able to interact with their surroundings within the game. In each level, the user is given a task and has to complete it by drawing the appropriate shapes that will cause the task to be completed. A simple example of the game mechanism is for a level with the task: “Make the ball hit the left wall”, where a ball is pre-loaded on the environment’s floor and the user needs to drop shapes on it in such a way that makes it move and touch the left wall.

Once the desired shape is drawn and the drawing key is released, the shape drops as a result of gravity and interacts with the ball and the environment similarly to real-world physics. For example, the bigger and denser the drawn shape is, the heavier it is when it interacts with the ball.

Some objects I will be implementing in the environment to interact with the drawings include: balls, attractive magnets, moving objects, etc. The user is given a maximum of 3 stars at the end of each level, one for completing the task successfully, one for completing it in optimal time, previously recorded, one for using the optimal number of shapes drawn to complete the task (less is better).

I will be using the following libraries:

PyMunk: To implement physics to my game.

PyGames: To add special and specific features to my game.

SciPy/NumPy/SimPy: To do advanced math and physics calculations.

WxPython or tkinter or just Pygame: To better my GUI.