

We want to implement Breakout, the arcade game, using the pygame library. By doing this, we will get to explore:

- Object-oriented programming
- Event-driven programming
- Computer Graphics

Our minimum viable product includes having:

- A paddle that follows the mouse or the arrow keys horizontally
- A ball which bounces when it hits objects
- Some objects/bricks which disappear when they are hit
- A score counter or timer

Our stretch goal is to add extra features such as:

- Requiring multiple hits to each brick to make it disappear and the bricks change color each time they are hit
- Add extra levels of difficulty where the ball moves faster, there are multiple balls, or the paddle becomes smaller
- Add sound effects with different actions

Our Breakout game is meant for anyone who wants to play games. However, because it is a primarily visual game, people with impaired vision may not be able to play. Also, the control interface is a computer mouse and keyboard, so anyone who cannot physically operate these devices would need some sort of controls adaptation in order to play.

For each member, the learning goals are: to learn how to develop a game (Izumi) and to learn how to use the pygame library (Lilo).

By the Mid-Project check-in, our product will overall be done but not polished, as in having most of the features of a working minimum viable product. Also, both members are expected to understand the basics of how to use the pygame library by the check-in.

The major risk for successfully completing this project is the spring break as we both are traveling away and are not able to gather together physically to collaborate on the project