



Augmented Reality Game with OpenCV + Pygame

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Agenda

- Overview: 2.5 minutes
- Ask Key Questions: 1.5 minutes
- Feedback on Key Questions: 3 minutes
- General Feedback: 3 minutes



Goal

- Create game that would combine CV and AR into the gameplay.
- Human player would be able to add obstacles to the game environment by placing them in front of a separate game display screen
- OpenCV would detect the obstacles, and these obstacles would become a part of the actual game that other features in the game could interact with.

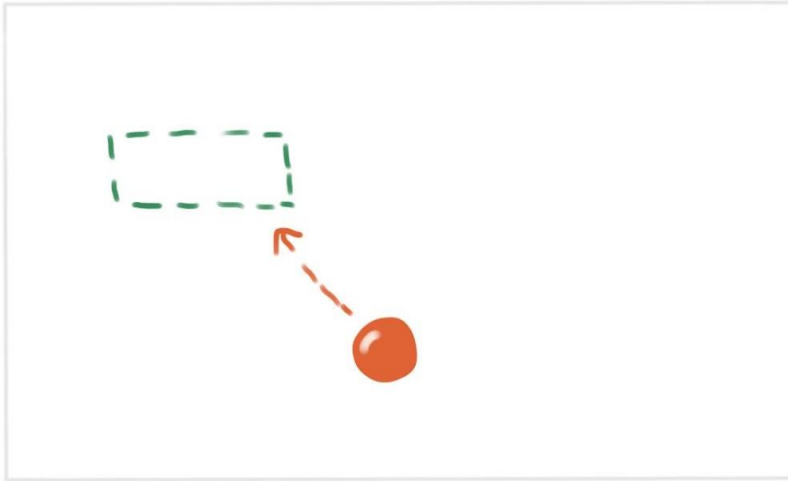
This idea is based off of a project we were impressed by at MakeHarvard (puppet.io).

Inspiration from MakeHarvard



Credit: Rose-Hulman Puppet.io Team @ MakeHarvard 2020

MVP Proposal



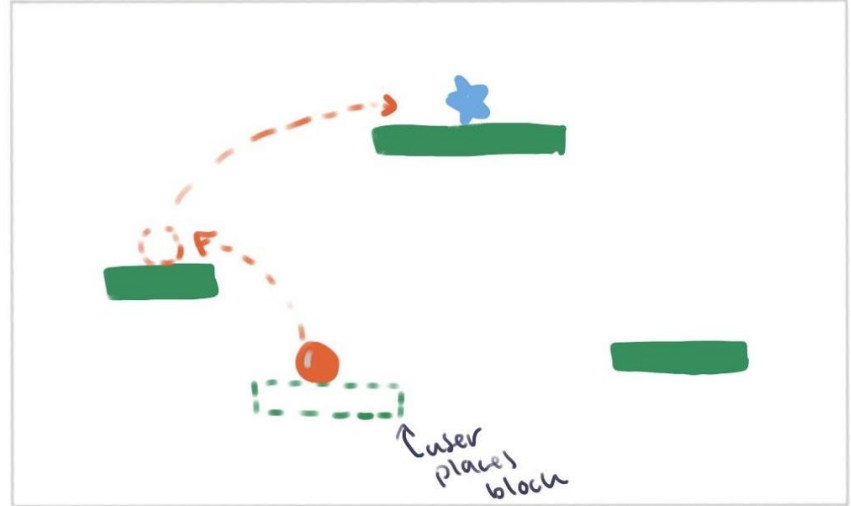
- Human player places a colored piece of tape on display
- Sprite drifts towards tape
- Indicates Pygame/OpenCV communications are functional.

Classic Platform Game

- Platforms are created from real world feedback
- Multiplayer

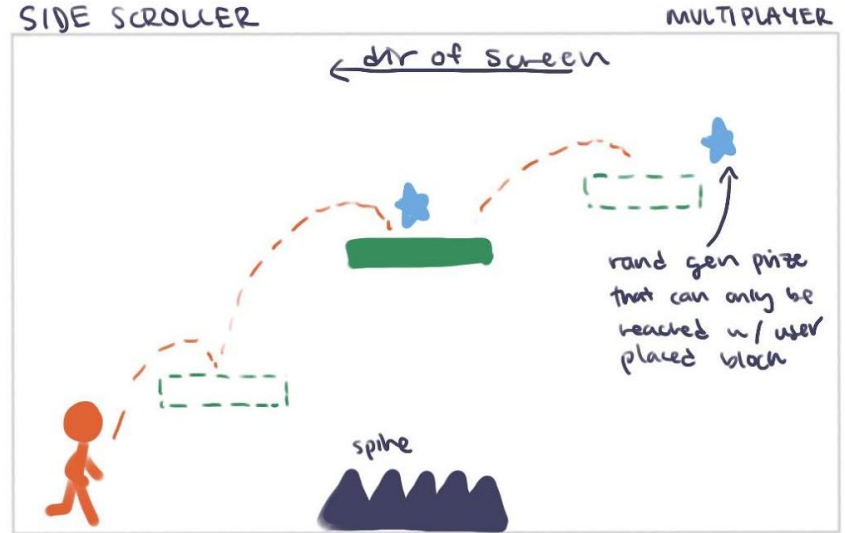
CLASSIC PLATFORM

MULTI PLAYER



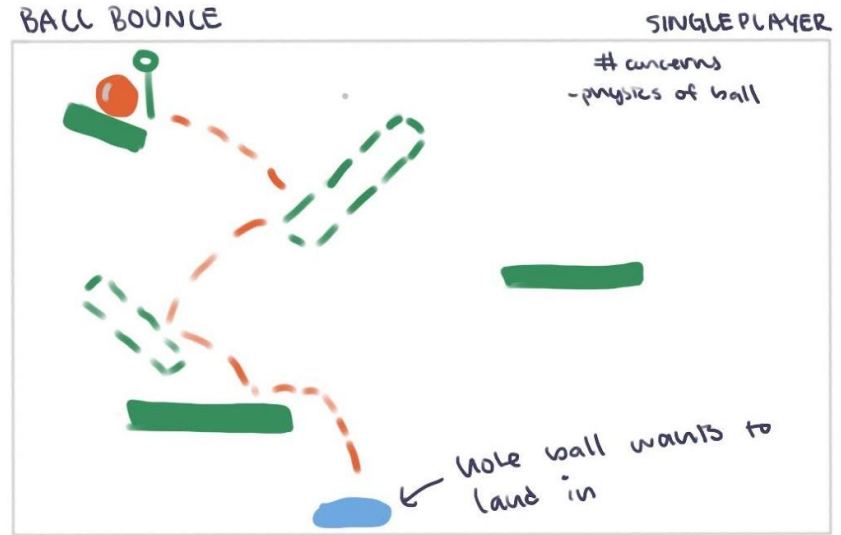
Side Scroller

- Mario style game
- Avoid obstacles by jumping onto platforms
- Collect prizes



Ball Bounce/Drop

- Place platforms so that the ball ends up in the hole
- Ball released by a latch after all platforms have been placed
- Single player or multiplayer
- Strategy





Our Concerns

- Fun vs. scoping:
 - Which game do you think would be most fun?
 - What would be a project within the scope of this time frame?
 - Which idea(s) seem to best balance scoping with fun and complexity?
- In a worst-case scenario, is having the MVP game behaviors sufficient?
- Do you see any potential issues we could run into, especially considering we both do not know how to use OpenCV yet?
 - If so, what are they?
 - How can we mitigate the effects of different ambient environments on how the camera is able to detect different objects?

Any Feedback?