

## CPSC 314 PROJECT 4 PROPOSAL

### Team Members:

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**Premise of game:** Harry needs to capture the golden snitch while avoiding obstacles.

**3D World:** A doughnut room with textured walls and beam to maneuver around. There are torches on the walls that provide light. The snitch glows/sparkles. Render Harry.

**Gameplay outline:** Start with Harry mounted on a broom in mid-air and the Snitch in front of him. Start by pressing enter and the timer starts counting down from 999 and begin the chase. Harry must fly around wooden beams that will be dynamically generated. The snitch can move through the obstacles (because it's magical) but not the side walls. It moves in a straight or zigzagging pattern that is always forward and away from Harry/camera. It periodically spawns rings which Harry can fly through to speed up (maybe implement this).

**Required features** (how they are being fulfilled):

- 3D Objects -- Harry Potter-esque character, the golden snitch, wooden beams, walls, and torches
- 3D Camera -- perspective of Harry in 1st/3rd person POV, mouse down to move camera, mouse up to snap back to position behind Harry
- Interactivity -- move Harry using the W/S/A/D keys (or up/down/left/right keys)
- Lighting/Shading -- torches on the wall, ambient glow trail from the snitch (maybe), ambient glow from the camera
- Picking -- click on the snitch once Harry gets close to it to win
- Texturing -- walls have stone texture, beams have wood texture
- On-screen control panel -- framerate counter (FPS), timer, scoreboard, map
- Gameplay -- You lose if the time runs out. You win by capturing the key and the score will be based on how fast you capture the snitch (time left)

**Options we plan to implement:**

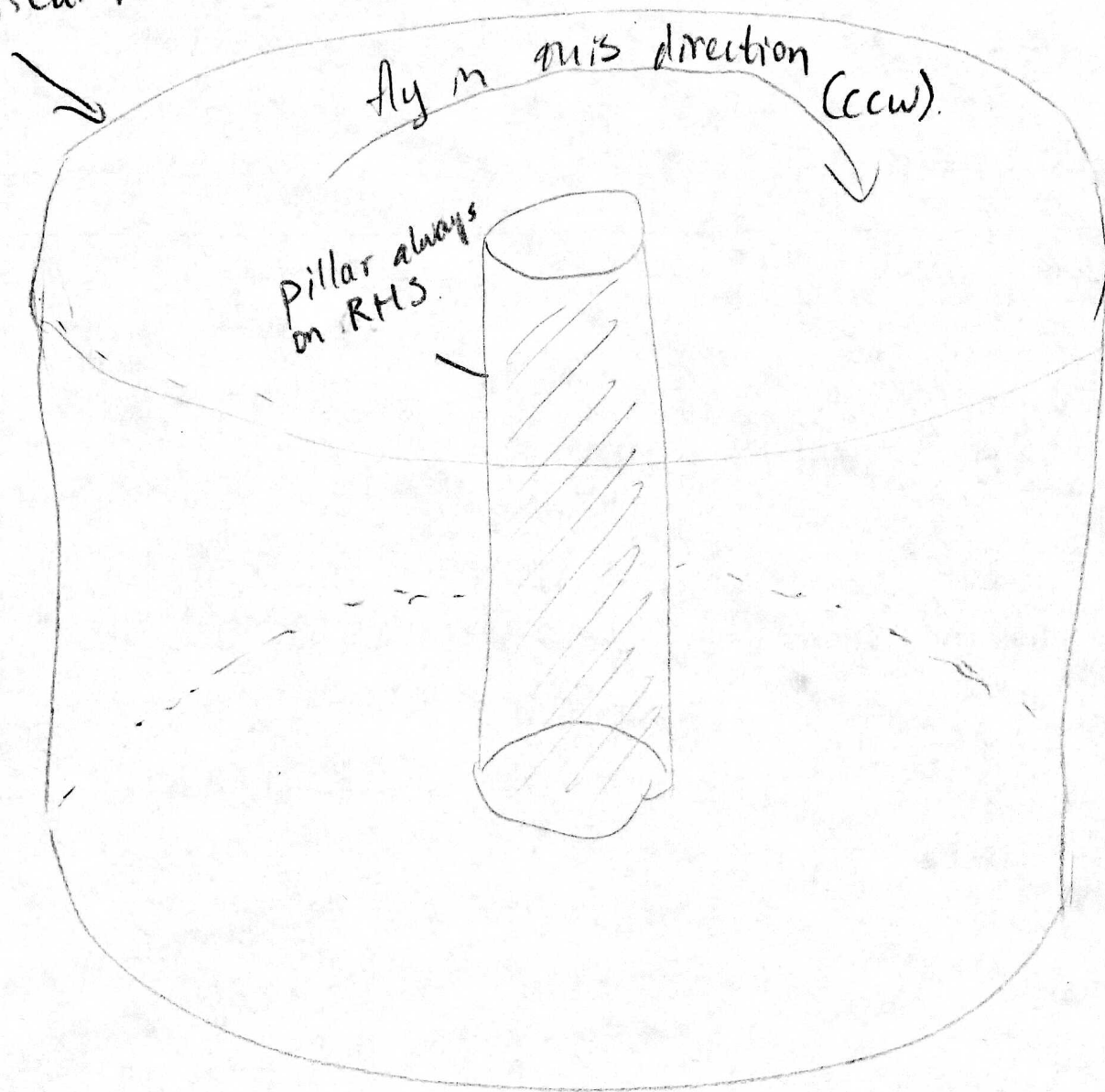
- Particle Systems -- glow/sparkle effect for the snitch
- Procedural motion -- arch obstacles are generated dynamically
- Collision detection -- walls/beams/ceiling/floor between Harry and the snitch

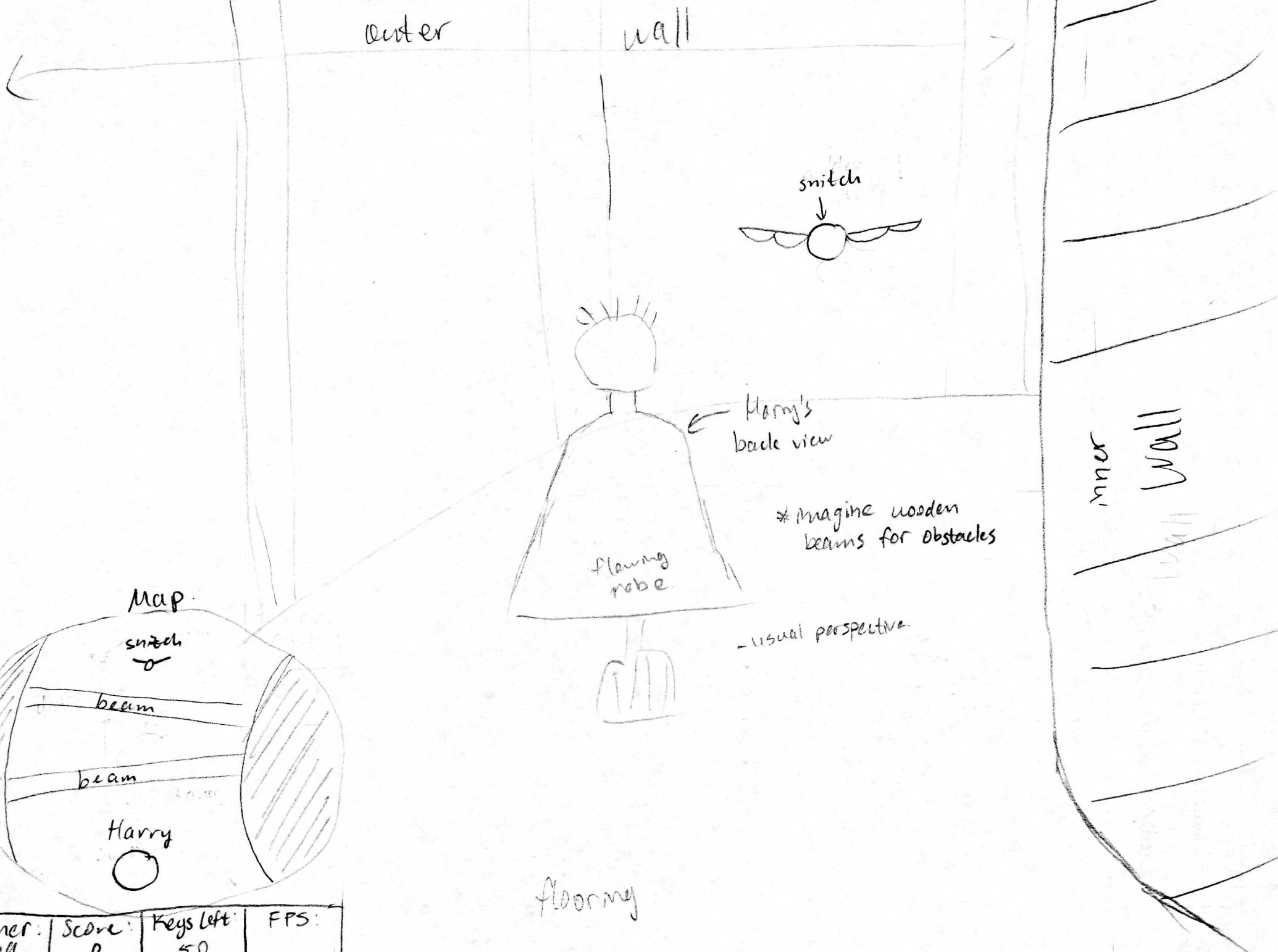
**What we anticipate will be difficult:**

- Collision detection

fly in  
cylindrical room

possible to  
create shaders  
that simulate  
infinite wall?  
or have to  
create this  
room?





outer

wall

snitch



Harry's  
back view

flying  
robe

\* imagine wooden  
beams for obstacles

- usual perspective

inner  
wall

Map

snitch

beam

beam

Harry

flooring

Timer:	Score:	Keys Left:	FPS:
999	0	50	