



## "The Floor is Lava"

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The level will be a hallway full of living room furniture and the goal of the game will be to get from one end of the hallway to the other to turn off the lava wheel to pass the level. There will be two levels. Once the player turns the lava wheel all the lava will drain from the room and order will be restored. (Why this was ever made an option, we're not sure. The architect was rather eccentric).

There will be two views available: first person and top down view (in which the camera zooms out and you can see the hallway from a bird's eye view). You will move around with the keys W, A, S, D and pan around the room in first person with the mouse.

The player will be able to jump with the space bar (and hopefully land on something stable) and pick up objects by pressing F and clicking the object with the mouse. These objects can then be ucked onto the floor to provide a stepping stone to the next piece of furniture.

The room will be lit using world coordinates for the most part. We'll also have a night-time mode where the user has a flashlight that they point at the center of their view, which will require a camera-world light source.


We will use textures (e.g. wood for desks, fabric for couches) and bump mapping (**Advanced rendering effects**) on the furniture.

In addition to the FPS counter, we'll also have a health bar in the UI (numbered chances) that decrements if the user is on the floor for more than a set amount of time.

The actual lava will bubble up from the wall vents, which will require particle systems for when things get dropped in **(Particle Systems)**. Obviously, all the furniture will be lava-proof. Ikea knows what it's doing.

The game will be shaded using a cel-shader. **(Shaders)**

The game will require collision detection because we do not want the player falling through furniture. It will also require that we animate objects being thrown onto the floor by the player. **(Collision detection)**

We will use procedurally generated  for smoke when the player falls into the lava.

Over time the amount of lava will increase and it will become impossible to reach the end of the hallway.

The lava will move and bubble much like real lava does. This shall be achieved using procedural deformation of the lava mesh. **(Procedural modeling or textures or motion)**

We'll also have a lava piranha that jumps at you from time to time. A very irritable creature that does not like its territory disturbed by nasty humans. The player will receive a visual warning in the form of a larger than usual lava bubble that contains the lava piranha. **(Animation)**

#### Special Technical Challenges

- Making sure that the generated floor has a solution