

## **Idea: Cat and Mouse**

### **Main Character: Mouse**

- **Mouse is initially starts from small hole**
- Mouse will maneuver throughout floor collecting all the crumbs, cheese and traps to change their score
- If mouse is caught by a cat or the score goes below 0 points the game is over and player loses with some score
- If mouse has collected all the crumbs and **returns to the starting point**, the game will be over and the player wins with some score
- Can only move once during any given tick

### **Enemies**

#### **Moving Enemy:** Cats

- The cats will move towards mouse in order to catch it
- Can't collect rewards or punishments
- After a specific intervals of time another cat will spawn
- Can only move once during any given tick

#### **Punishment:** Mouse traps

- If mouse has stepped over a trap, they will lose points
- There will always be  $n$  amount of mouse traps at any given time at random locations

### **Rewards**

#### **Regular:** Crumbs

- Specific amounts of crumbs will be scattered across the floor
- Mouse's objective is to collect all the crumbs
- If collected by mouse, the player gets points

#### **Bonus:** Cheese

- There will be at least one cheese on the floor at any given time
- Spawn at random locations and disappears if not collected after some time

### **Barriers**

#### House hold objects & Walls

- These objects and walls are barriers that neither the cat or mice can pass through directly

### **Board**

#### House Floor (Bird's eye view)

- The floor is the given area that the user can see
- Floor plan will consist of kitchen, living room, ...
- Initial map will contain the mouse,  $m$  cats, all crumbs,  $n$  traps and objects
- The board will also contain the player's score and time passed