

# Game Design

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## Objective

Make the cat chase the rat as long as possible. Both the cat and the rat will encounter some obstacles and the obstacles will come in increasing speed, but the obstacles are different for cat and the rat. Use two buttons to control the cat and the rat at the same time. Neither of them could die in the process to make the game run as long as possible.

## Gameplay mechanics

The game uses normal platform physics. The cat and the rat are the main characters and their positions do not change. But they may have some actions like run, jump and crouch. The world contains the cat object, the rat object, the obstacles and the platforms.

If the cat object or the rat object encounters its own obstacles, we can detect the collision by normal platform physics. And the collision will cause the end of the game.

## Level design

There are two kinds of obstacles in this game for the cat and the rat separately. One kind of obstacle is big which is a pillar from the top of the screen, and is only for cat. Because the rat is small, it can walk under the pillar directly. But when the cat encounters this kind of pillar, it needs to crouch to through it. Another kind of obstacle is small which is a hole in ground, and is only for rat. This hole is very small and the cat can run through it directly because the cat is of big size. But when the rat encounters these holes, it needs to jump to through it.

Levels are all in the same scene, but the obstacles are coming in the increasing speed to make the levels harder and harder. The increasing speed will need much more concentration and that will test player reactions.

Since there are two characters in one scene, levels should be laid out horizontally to make the scene clearer.

# Technical

## Scenes

- Main menu
- Gameplay

## Controls/Input

- Touch based controls
  - Touch cat button to make cat crouch
  - Touch rat button to make rat jump

## Classes/CCBs

- Scenes
  - Main menu
  - Gameplay
- Nodes/Sprites
  - Entity (abstract superclass)
    - ◆ Cat
    - ◆ Rat
  - World Object (abstract superclass)
    - ◆ Obstacles - pillars
    - ◆ Obstacles - holes

## MVP Milestones

### Week 1 (2/17 – 2/24/2015) – finishing a playable build

- Playable build of my game.
  - Implement objects and entities.
  - Only implement gameplay scene.

## **Week 2 (2/24 – 3/03/2015)**

- Add touches.
  - Cat button.
  - Rat button.
- Add obstacles.
  - Pillars.
  - Holes.

## **Week 3 (3/02 – 3/10/2015)**

- Loop the backgrounds.
  - More entities in the background.

## **Week 4 (3/10 – 3/17/2015) - finishing core gameplay**

- Add in some parallax.
  - Background and obstacles.
- Refine levels and refine control scheme.

## **Week 5 (3/17 – 3/24/2015)**

- Implement Main menu scene.
- Determine what other polish is needed.

## **Week 6 (3/24 – 3/31/2015) - finishing the polish**

- Integrate analytics.
- Screenshots.
- Write game description for App store.