My final project is a game called Matchstick Man: Stairs Killer. It is an extension of a popular Chinese Flash game series Matchstick Man*.* My inspiration comes from my experience on walking downstairs. While walking downstairs slowly is a common social convention, I realize that it is extremely exciting to jump or rush downstairs. Since it is dangerous to rush down a building in real life, and there is no relevant computer game simulates this situation, I decide to make it as a game in Processing.

In Stairs Killer, transverse view is used, and a Matchstick Man character is controlled by the player. As the player starts the game, the Matchstick Man will be automatically walking downstairs. When Matchstick Man reaches the end of the stair, the player must change the walking direction by pressing arrow key “←” or “→ ” correspondingly so that the Matchstick Man can enter next stair. Otherwise, the Matchstick Man will go off the stair, and the player will lose the game. The score is determined by the distance that Matchstick Man has travelled by the time game is over. There will be three difficulty levels for the game which differs in the waking speed of Matchstick Man. In order to make this game more challenging, each part of the stairs will have a random number of steps and thus the player will need to be flexible and concentrated. In addition, there will be different kinds of obstacles such as banana skin that slides down Matchstick Man and rocks which stumble the Matchstick Man. To skip these obstacles, the player needs to press “Space” to jump over the obstacle. There are also coins that increase the score in the air. The player must jump in the air to collect the coins. The player can only have one life, so when the game is over, the player can choose either restart or quit the game.

First issue I need to concern about is the animation for the Matchstick Man. That is, I need to come up a way to create fluent physical movements such as running and jumping for Matchstick Man and draw a vivid Matchstick Man figure. To achieve a good animation effect, I should use physics package in Processing library as well as other drawing tools. The second issue is to create iterations as the frame moves down. According to what I heard, there are two ways to achieve this goal. One is to create a long and complete map for the game. As the player moves down, the screen scrolls down until it reaches the end. Another approach is to keep changing the position of the stairs in order to make them up. I need further research to verify the correct way to achieve my goal. Additionally, I need to learn how to use keyboard input to modify the behavior of the character and how to identify collision between objects as well as creating buttons in the game interface. Processing API should have solutions for this problem.