

## Benchmark 1: Initial Game Concept

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### BENCHMARK DESCRIPTION

*Explore a variety of card, dice and other types of games and choose at least one that you would like to implement or adapt as a computer based game. Write up your concept and include:*

- i. Background on why you chose this game*
- ii. An overview of the game (including its objective)*
- iii. A description of how you see the game being implemented in StarLogo Nova*
- iv. At least two major challenges you think you might have programming this game.*

*When choosing your game, be sure to give some thought to Benchmark#2: you will want to choose a game that will make the probability analysis straightforward.*

### 3 Houses

Growing up, one of our favorite bedtime stories was the 3 Little Pigs. The story about 3 pigs that all built houses made from sticks, straws, and bricks. Then one day the Big Bad Wolf came around and blew the houses made from sticks and straws down. The two piggys inside those houses fled to the third pig's house (which is made of bricks) for safety. The Big Bad Wolf tried blowing down that house but he couldn't. Thus, the 3 Little Pigs lived happily ever after.

We wanted to include that somehow but we didn't know how. Then we remembered Mr. Corner's example (3 Doors) and decided to include that. In 3 Doors, there were three doors with a prize behind one of the doors. One door would have a car behind it and the other two would have a goat behind the door. The object of the game was to guess which door the car was behind. After you chose a door, the host would open a door that had a goat behind it. The host would then ask you if you wanted to stay with your pick, or if you wanted to change your answer to the only other door remaining. After you made your decision, the host would open the door you chose. If there was a car behind the door you chose, then you won that car. If there was a goat behind the door you chose, then you won the goat. And so, our game was created.

For this project, we are going to use StarLogo Nova to create this scene. We will program 3 houses that look the same but have varying colors. The player will have the option to click on a certain colored house. StarLogo Nova will then provide feedback similar to the way a game show host would that says something along the lines of "Are you sure?" and a wolf will come in and blow a house down. The player will then get the option of keeping the house or switching. Ultimately, the player discovers if the house they chose is made of brick or not

when it blows down (or doesn't blow down). If their house doesn't blow down when we program the wolf to blow on it then they win the game.

One big challenge that we could come across would be figuring out how to program StarLogo Nova in such a way that the Player can click "Stay" or "Switch". A second challenge I see with this concept is how to estimate the experimental probability of this game.