**The Game of Hog**

Current score: 0 to 0

How many 4 sided dice will you roll? 012345678910

In Hog, two players alternate turns trying to reach 100 points first. On each turn, the current player chooses some number of dice to roll, up to 10. She scores the sum of the dice outcomes, unless any of the dice come up a 1 (Pig out), in which case she scores only 1 point for the turn.

To spice up the game, we will play with three special rules:

1. **Hog Tied**. If the sum of both players' scores ends in a 7 (e.g., 17, 27, 57), then the current player can roll at most 1 dice.
2. **Hog Wild**. If the sum of both players' scores is a multiple of 7 (e.g., 14, 21, 35), then the current player rolls 4-sided dice instead of the usual 6-sided dice.
3. **Free Bacon**. If a player chooses to roll zero dice, she scores the tens digit of her opponent's score, plus 1. E.g., if the first player has 32 points, the second player can score 4 points by rolling zero dice.

Homeworks they should be your priority. And they are much more fun if you start early and give yourself time to understand them and think about them instead of fitting them in 1 night.

And particular as you go along sometimes you get stuck. I have some Advice. Office hours. You should go. Some of you don’t believe me so I’m performing a little ceremony. And it starts with the Tas. Make a vow when a student comes to your

Students: when you find that you are confused by a lecture slide, homework problem, project, rather than sitting alone in your room for 5 hours, straight wondering why you don’t understand this material. Instead do you vow to come to office hours, discuss your questions with your peers and course staff and bring yourself to an understanding and love computer science even more

If so say we will. STUDENT: we will

In that case by the power vested in me by a university Berkeley I pronuounce you not alone. You are not alone in this class. Not alone.

The office hour schedule is online. Use it. On that note. I have extra office hours today because I missed on Monday ever Mondays so from 6 to 7 today aske me anything.

The project itself which hopefully won’t be too confusing is about the game of hog. We didn’t get to play hog last time so we will play really quick

Hog is a 2 player game. Here are players Me and all of you. Those are the players. What we do is roll dice(game). I carry a lot of dice I’m one of those guys. So we alternate turns on person we are both trying to reach a goal number. Normally the goal is hundred but since we actually have learning to do we play to 30. What happens on someone turn They choose a number of dice up to 10 and roll them on . 2 things can happen They can roll a 1 any mong dice in which case that person scores I point for the turn

There’s me. And there’s you. I will decide how many dice I roll . rather than have all you vote I think I will point the arbitrary people and you tell me a number a from 1 to 10.

You have rolled 3 ones. Because you rolled any ones you get 1 point. I’ll roll 3. I rolled 2 ones so I have 1 point. I’m rolling 4. I’m really good at this game which is why I got 8, 11 and 5, 16, so I now have 17. You only have 2. That’s considerably better than you were doing before

We are playing to 30. What are you going to do. I’ve never won a live game of hog in my life before. I’m rolling 5. Someone told me the best thing to do is roll a 5. So I’m rolling a 5, this has never happened. I just got 23 points. Yeah that’s it. I’m too good at this game. So you can play.

There’s a question.

Student: you cheated that was multiple of 7 your scores.

John denero: so someone has accused me a cheating

Often times the best way to win is to cheat. So the course Web site has. You look at the online hog implementation. You notice that the description of the game I told you is here but in the version you are doin there are 3 special rules which have to do with when players’ scores end in 7 or multiple 7 or 0 dice. You can read on your own. We weren’t playing that variant I made it up to make it more interesting. So programs I didn’t really win because I cheated but we are moving on from this point. The game of hog: in general the more dices you roll, the more points you get when you don’t roll a 1. But higher chance of rolling a 1. So what happens is if you roll some fixed number of dice like 3 is third column. Many times over you average the score you get, on average it’s 7.4 points expected score. And you see the best expected score is at 6,5 is close too. So typicall to roll 5 or 6 and average you get 8 and a half points. So you might think is that boring that’s it 5 times over and over. There’s more strategy. In particular think about when you are close to the end. I had 26 points. I needed 4 to win. Anything more than 30 point was really just additional and made me feel good but not necessary. But I’m not maximizing my expected score per turn but chance of winning. What’s the chance of scoring 10 points or more on a turn 10 points away from winning so highest probably is rolling 3 or 4 dice you have a 30 to 40 percent chance of winning. So there are things you can explore. But I think it’s cool.

Question is: whether at the beginning of the game when both have 0, is that a multiple of 7 yes 0 is multiple of 7.

Student: do people actually play this game anywhere.

It’s my

I’m not sure how often people play. I play with my wife occasionally a variant called pig. That’s because she is willing to humor me not because she likes it. That’s the game of hog. Start your project, go to office hours. So now higher order functions we talked about last Friday but we have to make sure how they work as opposed to just examples. So it’s