PROJECT SPECIFICATION

1. General information

- Counting game is a game for 2 players. In this project, this is the game between human and computer, human player has the chance to start first.
- **Rules:** There will be a **number N**. Starting from 1, who counts to N first will be the loser. In each turn, each player must pick at least 1 number and at most "**max**" number.
- **For example:** Given N=10 and max=2

  +Player 1: 1
  +Player 2: 2,3
  +Player 1: 4,5
  +Player 2: 6
  +Player 1: 7,8
  +Player 2: 9
  +Player 1: 10
  ***Player 1** reaches N=10 first, so Player 1 is the loser.

2. Idea

- Take N=30, max=2 as an example.
- **To win the game**, player needs to reach 29, so that the oppenent has no choice but to pick 30 and loses.
- To get to 29, he needs to get to 26, so

+ If the opponent picks 27, he can pick 28, 29 (done)

+ If the opponent pick 27, 28, he can pick 29 (done)

- To get to 26, we need get to 23, 20, … , 2. I call these numbers "potential numbers"

3. Implementation

- This project implements the game with general cases. I will allow user to set N and max and give user the chance to go first
- Computer will try to reach potential numbers to win. If in a round, the computer cannot get to a potentiall number, it can reach to a random number.

4. Coding

- The project will be seperated in smaller sections (files) (s1.m, s2.m , etc.). Those files will also be used to test itself before putting in the main file.
- At the end, every part will be gathered in 1 file called letscount2.m

5. Testing (assume that each player will enter the valid inputs)

- Try different numbers to check if it works or not. Results of tests are saved in .txt files.