

## Assignment 1 - Pass the Pigs

Teresa Joseph

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### Purpose

Implement a game of “Pass the Pigs” where players take turns rolling a pig to score points

### Game breakdown

- k number of players (2 min and 10 max)
- Each player rolls a pig (5 possible positions) to gain points
  - 0 points for either side (2/7 probability)
  - 5 points for either jowler/ear (2/7 probability)
  - 10 points for razorback/back (1/7 probability)
  - 10 points for trotter/upright (1/7 probability)
  - 15 points for snouter/nose (1/7 probability)
- If side is rolled, end turn and pass to next player
- Else, continue rolling until side is rolled (then pass to next player)
- First person to reach 100 or more points wins and ends game

### Pseudocode

#include <stdio.h> for commands

#include <stdlib.h> for random generator

#include <limits.h> for seed range

Main function:

[Obtaining the number of players]

Prompt user to enter the number of players with “How many player?” (and use scanf),  
call variable k

If the input is less than 2 or greater than 10:

Print error message and assume 2 players (so k = 2)

If the input is not an integer:

Print error message and assume 2 players (so k = 2)

Else, continue with k = value from user

[Obtaining the seed value]

Prompt user to enter a valid/unsigned seed value with “Random seed:” (and use scanf),  
call variable seedValue

If the input is invalid (aka signed):

Print error message and assume seed value of 2021 (so seed(2021) will be used)

Else, continue with seed = value from user

[Creating arrays for the pig roll]

Create array from 0 to k-1 that represents each player, call array players

Create another array from 0 to k-1 that represents each player's points and have it be  
entirely 0s, call array points

Create another array that enumerates the 5 positions (side, jowler, razorback, trotter, and  
snouter), use typedef and define it as Positions (as stated in assignment document)

Create another array of the roll possibilities (side, side, jowler, jowler, razorback, trotter,  
and snouter) -> call it pig (as stated in assignment document)

[Simulating the pig roll]

For i = 0, i < k, i += 1 (each player, starting with 0th player and until player #k-1):

Print player name from names.h

Randomly select value from pig with srandom()

If pig[random() % 7] == side:

Increase i by 1 (moves to next player)

Go back to the start of the loop

Else:

If pig[random() % 7] == jowler:

points[i] += 5

If pig[random() % 7] == razorback:

points[i] += 10

If pig[random() % 7] == trotter:

points[i] += 10

If pig[random() % 7] == snouter:

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points[i] += 15
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Return 0
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[End]
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Note: `random() % 7` makes sure that the