Brian Nguyen
Assignment 1 DESIGN.pdf

Description

This program simulates a game of “Pass the Pigs” based on a random positive 32-bit integer seed with a minimum of 2 and maximum of 10 players. All players start with 0 points with the objective of trying to reach 100+ points first. To earn points, players must each take turns in a cyclic fashion “rolling” the pig. Much like dice, a pig has 7 sides: 2 “side” sides, 1 “razorback” side, 1 “trotter” side, 1 “snouter” side, and 2 “jowler” sides. Each different side corresponds to a different amount of points added with rolling either “razorback” or “trotter” earning 10 points, “snouter” earning 15 points, and “jowler” earning 5 points. A player stops rolling and forfeits their turn when they roll a “side” which earns them 0 points and gives the turn to the next player in the circle.

Files

- Pig.c
    - The source code file for the program which contains all the logic that allows the game to simulate.
- Names.h
    - The header file that provides the names of the players that will be “playing” the game in an array.
- Makefile
    - The file that formats the program to be used in clang-format and compiles it to be run.
    - Also, the make clean function must remove compiler-generated files.
- README.md
    - The markdown text file that contains the description of the project and how to run it.
- DESIGN.pdf
    - The manual of the program expressed thoroughly with pseudocode and visualizations.

Pseudocode/Structure

#initialize files and variables

Include/import all files (including names.h)

Define default 2021 random seed

Define enumeration of positions

Define pig positions array

#initialize input variables

Make total players variable

Make random seed variable

#ask for input from user to simulate game (print out error msgs if applicable)

Scan for input from user for amount of players (between 2 and 10 inclusive)

Print error if it is not in range or invalid and leave error msg + default to 2 players

Scan for user input for random seed

Print error if seed is not a positive 32 bit integer and leave error msg + default to 2021 seed

#set logic for game to start

Set random seed based on input

Make points array based on players

#start game

Make current player variable

While points of current player less than or equal to 100

    Roll number

    If pig lands on x side

        Add points to array index of current player based on side

    Elif pig lands on “side”

        Make next player in the rotation the current player

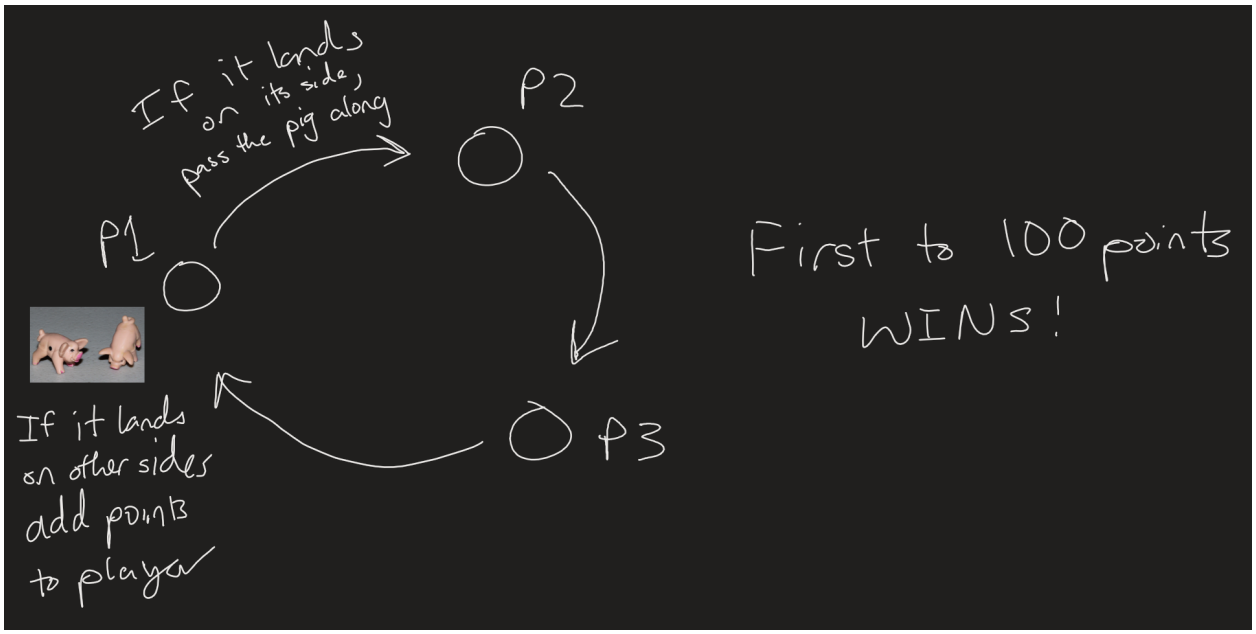
    If current player is over 100 points

        Break

#congratulate

Print stdout msg that tells player they won and celebrate

Simple High Level Example Visualization



Error Handling

- None so far
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Credits

- The Assignment 1 PDF that Professor Long has put out for us
- The recording of the lab section Eugene held on 9/24