
PIG GAME

Pig is a simple dice game first described in print by John Scarne in 1945. Players take turns to roll a single dice as many times as they wish, adding all roll results to a running total, but losing their gained score for the turn if they roll a 1.

Each turn, a player repeatedly rolls a die until either a 1 is rolled or the player decides to "hold":

- If the player rolls a 1, they score nothing and it becomes the next player's turn.
- If the player rolls any other number, it is added to their turn total and the player's turn continues.
- If a player chooses to "hold", their turn total is added to their score, and it becomes the next player's turn.

The first player to score 100 or more points wins.

For example, the first player, Donald, begins a turn with a roll of 5. Donald could hold and score 5 points, but chooses to roll again. Donald rolls a 2, and could hold with a turn total of 7 points, but chooses to roll again. Donald rolls a 1, and must end his turn without scoring. The next player, Alexis, rolls the sequence 4-5-3-5-5, after which she chooses to hold, and adds her turn total of 22 points to her score.





Task

Using the above rules, you have been asked to design and make a program for two players to compete in this game taking it in turns back and forth.

Players should be able to enter their names into the program and be prompted by name each time.

You will design, implement and test your program. You must also justify and evaluate your decisions including any additional features.

EXTENSIONS

Once completed there are a number of possible extensions that can be tackled in any order:

ALL EXTENSIONS REQUIRE A CONSOLE MENU SYSTEM TO OPERATE:

1. Let the players choose what kind of dice they play with at the start of the game (d4, d6, d8, d10, d12, d20) - Make sure to adjust winning scores accordingly
2. Allow for more than 2 players, when the game starts it should request how many people are playing
3. Add additional game modes with the following rules:
 - a. Two-Dice Pig
 - i. The game is be played with a pair of dice instead of one
 - ii. This variation is the same as Pig, except:
 - iii. Two standard dice are rolled. If neither shows a 1, their sum is added to the turn total.
 - iv. If a single 1 is rolled, the player scores nothing and the turn ends.
 - v. If two 1s are rolled, the player's entire score is lost, and the turn ends.
 - vi. If a double is rolled, the point total is added to the turn total as with any roll but the player is obligated to roll again (possible sub-variation of the two-dice game)
 - b. Big Pig
 - i. This variation is the same as Two-Dice Pig, except:
 - ii. If two 1s are rolled, the player adds 25 to the turn total.
 - iii. If other doubles are rolled, the player adds twice the value of the dice to the turn total.