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10/03/21

CSE 13S Assignment 1 Design Document

Purpose:

This assignment is a program simulating the game Pass the Pigs. In this game, the dice represents a pig, and certain rolls result in a different number of points earned by the player rolling the dice. Play rotates around through all of the players until a player reaches 100 or more points; at that point, that player wins the game. My pseudocode for this program will be in Python, which I will replicate in C for the actual assignment. My pseudocode due to differences between Python and C.

Structure:

The entire program is executed through the main function. There are spaces in between the particular parts, including user input for the number of players and the random seed, the rolling of the dice until a player rolls side, the change of player rolling dice after rolling side, and the final congratulatory message.

Description:

The initial code in my program is the arrays being used, which would be the names array and the positions array. In the final program, I create the points (for the players) array later in the program, and the names array is accessed through the names.h file.

```
names = ["Wilbur", "Charlotte", "John", "Fern", "Templeton", "Avery", "Homer",  
         "Henry", "Dr. Dorian", "Aranea",]  
player_pts = []  
positions = ["SIDE", "SIDE", "RAZORBACK", "TROTTER", "SNOUTER", "JOWLER", "JOWLER"]|
```

This part of the program is the user input and checking for invalid input. This snippet code in my design is obviously very different from my final program because in that program, I also get a random seed from the user as well. I also create the points array later in the program for my actual program.

```
num_players = int(input("How many players? "))
if ((type(num_players) != int) or (num_players < 2) or num_players > 10):
    print("Error. Using 2 players instead")
    player_pts = [0, 0]
else:
    for i in range(num_players):
        player_pts.append(0)
```

This part of the program represents the rolling of the dice. For the continued circling around of the players, I use an infinite while loop that will be ended using break later on. On the initial roll by each player, I print their name and that they are rolling. Then, depending on which position is rolled, I print their result and add points to their total within the player points array. The index num is used to track which player is currently playing and should be getting the points.

```
num = 0
while (True):
    roll = random.choice(positions)
    print(names[num] + " rolls the pig... ", end = "")

    while(roll != "SIDE"):
        if roll == "RAZORBACK":
            print("pig lands on back ", end = "")
            player_pts[num] += 10

        if roll == "TROTTER":
            print("pig lands on back ", end = "")
            player_pts[num] += 10

        if roll == "SNOUTER":
            print("pig lands on snout ", end = "")
            player_pts[num] += 15

        if roll == "JOWLER":
            print("pig lands on ear ", end = "")
            player_pts[num] += 5

    roll = random.choice(positions)
```

This part of the program will occur when a player rolls side. First, I check if it is the last player, which means I need to reset back to the first player by adjusting the index num. Then, within each part of the if-else, I print the message of the pig landing on its side. Then I check if the current player has 100 or more points; if they do, the program will break out to the congratulatory message.

```
if (num < len(player_pts)-1):
    print("pig lands on side")
    print(player_pts)
    if (player_pts[num] == 100 or player_pts[num] > 100):
        break
    num += 1
else:
    print("pig lands on side")
    print(player_pts)
    if (player_pts[num] == 100 or player_pts[num] > 100):
        break
    num = 0
```

Finally, this is the congratulatory message to the player for when they win the game.

```
print(names[num] + " wins with " + str(player_pts[num]))
```