CS 101
Fall 2015
Program Assignment # Makeup
Program Due : Sunday, 12/13/2015

The makeup program can be used to replace one of your first six programs. That's assignments 1-6.

Zombie Dice

Zombie dice is a fun press your luck dice game for 2 or more people. Steve Jackson Games has allowed us to use the rules of zombie dice for our programming assignment.
http://www.sjgames.com/dice/zombiedice/

You are playing as the zombie. Zombie dice involves each player rolling 3 dice. If they roll a brain they move that die to their left. If they roll a shotgun blast, they move the die to their right. If they have 3 or more shotgun blasts, then their turn is over and they lose any points they collected in that round. Otherwise, they have the option to take the brains they've collected during their turn and add it to their score. They can also press their luck and continue rolling. They cannot lose their total score, but can lose any brains they've collected during their turn.

Game rules

- Each player takes turns rolling the dice. Each six-sided die has 3 possible outcomes on the faces. Shotgun, brain and feet.
    - Shotgun - These you want to avoid. 3 Shotgun blasts during your turn results in losing your score for that turn. The next player then is allowed to play
    - Brain - You are trying to collect as many brains as possible.
    - Feet - This means the person ran away.
- After each roll if a player has 3 total shotgun blasts then their turn is over and they've lost any points they collected during that turn.
- If after rolling the die, the user has fewer than 3 total shotgun blasts, then
    - the number of brains they rolled are collected, and not put back in the dice pool
    - the number of shotguns are collected and not put back in the dice pool
    - The runners are put back to be rolled again.
    - Random dice are pulled to roll so that the user is rolling 3 dice
    - The user continues rolling.
- Each player gets a turn. If after all the players have gone, and one player has a score of 13 or greater, that player is the winner. If 2 or more players are tied with the high score, then the tied players continue playing until there is a winner.

Implementation

- You must prompt the user for the # of players. The user must enter an integer from 2-4 inclusive.
- The user will then be asked for the names of all the players. If they do not enter a name, then the player name will simply be Player_#, where number is the # of the player. Either 1, 2, 3 or 4.
- After each game the winner is declared and all the scores are displayed. The user is then asked if they want to continue. The only valid responses are 'Y', 'YES', 'N', or 'NO'. If they respond with 'Y' or 'YES', then they will be prompted to enter the # of players and begin play again.
- Prior to each player's turn, you should display the scores for all the players.
- There are 13 die. 6 green, 4 yellow and 3 red. Each 6 sided dice of a given color has a different proportion of shotgun blasts, brains and footsteps.
    - Green die have 3 brains, 2 runners and 1 shotgun. Making it less likely to get blasted.
    - Yellow die have 2 brains, 2 runners and 2 shotguns. So the odds of all are equal.
    - Red die have 1 brain, 2 runners and 3 shotguns. Making it more likely to get blasted.
- During a player's turn they are given a random 3 dice to roll. Each brain and shotgun blast is kept and tallied. If the player wants to continue they have to use any footsteps they rolled in the last round and randomly select more dice from the pool, so that they have 3 dice to roll again. The brains and shotguns are not put back into the die pool, they are put to the left and to the right of the player to track how many brains and shotguns they've taken during their turn.
- Prior to asking the user if they want to roll again, you should display the color of the dice they are holding (footsteps from the last roll). You should also display the dice colors in the pool of dice left. This helps the user decide the risk/reward. If they got 3 green dice that were footsteps from the previous roll, then they know they are much less likely to roll a shotgun blast with reach die.
- After each roll (assuming the user did not collect 3 shotgun blasts). You will ask the user if they want to roll again. They are only allowed to enter 'Y', 'YES', 'N', or 'NO'. If they respond with no, then the number of brains they collected are added to their total score.

Example

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How many players in this game? 3
Enter Player 1's name Kendall
Enter Player 2's name Hare
Enter Player 3's name Burris
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        Kendall           Hare         Burris
              0              0              0

Kendall rolled BRAIN RUNNER RUNNER
Brains 1 - Shotguns 0
Held dice 1 green, 1 yellow and 0 red
Pool 5 green, 2 yellow and 3 red
Do you want to roll again (Y/N) ? y

Kendall rolled BRAIN BRAIN SHOTGUN
Brains 3 - Shotguns 1
Held dice 0 green, 0 yellow and 0 red
Pool 5 green, 1 yellow and 3 red
Do you want to roll again (Y/N) ? y

Kendall rolled RUNNER BRAIN RUNNER
Brains 4 - Shotguns 1
Held dice 0 green, 1 yellow and 1 red
Pool 4 green, 0 yellow and 2 red
Do you want to roll again (Y/N) ? n

        Kendall           Hare         Burris
              4              0              0

Hare rolled SHOTGUN BRAIN SHOTGUN
Brains 1 - Shotguns 2
Held dice 0 green, 0 yellow and 0 red
Pool 5 green, 3 yellow and 2 red
Do you want to roll again (Y/N) ? n

        Kendall           Hare         Burris
              4              1              0

Burris rolled RUNNER RUNNER BRAIN
Brains 1 - Shotguns 0
Held dice 1 green, 0 yellow and 1 red
Pool 4 green, 4 yellow and 2 red
Do you want to roll again (Y/N) ? y

Burris rolled BRAIN SHOTGUN BRAIN
Brains 3 - Shotguns 1
Held dice 0 green, 0 yellow and 0 red
Pool 3 green, 4 yellow and 2 red
Do you want to roll again (Y/N) ? y

Burris rolled RUNNER RUNNER RUNNER
Brains 3 - Shotguns 1
Held dice 1 green, 1 yellow and 1 red
Pool 2 green, 3 yellow and 1 red
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```
Do you want to roll again (Y/N) ? y

Burris rolled BRAIN RUNNER SHOTGUN
Brains 4 - Shotguns 2
Held dice 1 green, 0 yellow and 0 red
Pool 2 green, 3 yellow and 1 red
Do you want to roll again (Y/N) ? y

Burris rolled BRAIN SHOTGUN SHOTGUN
Burris has 4 shotguns and loses their turn

        Kendall           Hare         Burris
              4              1              0


...

        Kendall           Hare         Burris
             12             10             11

Kendall rolled BRAIN RUNNER SHOTGUN
Brains 1 - Shotguns 1
Held dice 1 green, 0 yellow and 0 red
Pool 4 green, 3 yellow and 3 red
Do you want to roll again (Y/N) ? n

        Kendall           Hare         Burris
             13             10             11

Hare rolled RUNNER SHOTGUN BRAIN
Brains 1 - Shotguns 1
Held dice 0 green, 1 yellow and 0 red
Pool 6 green, 2 yellow and 2 red
Do you want to roll again (Y/N) ? y

Hare rolled BRAIN BRAIN RUNNER
Brains 3 - Shotguns 1
Held dice 0 green, 1 yellow and 0 red
Pool 6 green, 1 yellow and 1 red
Do you want to roll again (Y/N) ? n

        Kendall           Hare         Burris
             13             13             11

Burris rolled SHOTGUN BRAIN BRAIN
Brains 2 - Shotguns 1
Held dice 0 green, 0 yellow and 0 red
Pool 5 green, 2 yellow and 3 red
Do you want to roll again (Y/N) ? y
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Burris rolled BRAIN SHOTGUN RUNNER
Brains 3 - Shotguns 2
Held dice 1 green, 0 yellow and 0 red
Pool 4 green, 1 yellow and 2 red
Do you want to roll again (Y/N) ? y

Burris rolled RUNNER RUNNER RUNNER
Brains 3 - Shotguns 2
Held dice 2 green, 1 yellow and 0 red
Pool 3 green, 0 yellow and 2 red
Do you want to roll again (Y/N) ? y

Burris rolled BRAIN BRAIN RUNNER
Brains 5 - Shotguns 2
Held dice 0 green, 1 yellow and 0 red
Pool 3 green, 0 yellow and 2 red
Do you want to roll again (Y/N) ? y

Burris rolled SHOTGUN BRAIN BRAIN
Burris has 3 shotguns and loses their turn

        Kendall           Hare
             13             13

Kendall rolled SHOTGUN SHOTGUN BRAIN
Brains 1 - Shotguns 2
Held dice 0 green, 0 yellow and 0 red
Pool 6 green, 2 yellow and 2 red
Do you want to roll again (Y/N) ? n

        Kendall           Hare
             14             13

Hare rolled RUNNER RUNNER BRAIN
Brains 1 - Shotguns 0
Held dice 1 green, 1 yellow and 0 red
Pool 5 green, 2 yellow and 3 red
Do you want to roll again (Y/N) ? y

Hare rolled SHOTGUN RUNNER BRAIN
Brains 2 - Shotguns 1
Held dice 1 green, 0 yellow and 0 red
Pool 4 green, 2 yellow and 3 red
Do you want to roll again (Y/N) ? n

        Kendall           Hare
             14             15
Hare has won

Do you want to play again? (Y/N) n
```

References

- http://www.sjgames.com/dice/zombiedice/ - Official Zombie dice page
- http://www.sjgames.com/dice/zombiedice/demo.html - Zombie dice demo
- http://www.sjgames.com/dice/zombiedice/img/ZDRules_English.pdf - Official rules
- https://docs.python.org/3.4/library/random.html - Python random module.