Explanation of classes is in Bowling Game

Game Class

The game class is responsible for performing all operations. It can simulate a game of bowling.

Methods

Roll – takes in number of pins knocked down and adds it to the array which keeps track of pins knocked down on each roll.

Score – called once game is over. Loops through 10 frames and checks 2 rolls at a time for each frame. Has an if statement that determines whether the player got a strike, spare, or regular roll. The score is added up differently depending on the roll. After all 10 frames are looped through, returns the final score.

sumOfBallsInFrame – The basic way of adding up pins knocked down in a frame if there was no strike or spare.

spareBonus - Just returns the result of the first roll on the next frame so it can be added to the score from the last frame since they got a spare.

strikeBonus - Returns the result of the next frame (i.e. both rolls) so it can be added to the current frame to determine its score since that frame was a strike.

isSpare – Checks both rolls in current frame to determine if they add up to 10. Return true if so otherwise return false.

isStrike - Checks first roll on current frame to see if it is ten, if so return true otherwise return false.

BowlingGameTest Class

The class responsible for performing unit testing on Game class.

Methods

setUp – just creates a new instance of game class for tests to use.

rollMany - Rolls as many balls as input, and each roll knocks down the same number of pins based off input.

testGutterGame - Just tests to make sure a game of no score will return 0 for the score.

testAllOnes - Checks to make sure rolling 20 balls in a row knocking down 1 pin each time will return 20.

testOneSpare – Checks to make sure spares are calculated properly (i.e rolling a spare then 3 on next ball should add up to 16).

testOneStrike – Checks to make sure strikes are calculated properly (i.e rolling a strike and then 7 on next frame should add up to 24).

testPerfectGame - Checks to make sure a perfect game adds up to 300.

rollStrike - Sets current roll = 10

rollSpare – Sets both rolls in frame equal to 5 for testing purposes.