

## Practical Coding Exercise

### Goal

The goal is to produce code to compute bowling scores. Given a series of inputs the program should output the player's final score. There will be a walkthrough session at the end of the exercise where you will be asked to justify code/design decisions. A known set of input will also be run against your program to check that it is working as per the specification below.

### Specification/Rules of Bowling

Each game, or line of bowling, includes ten turns, or frames for the bowler.

In each frame, the bowler gets up to two tries to knock down all the pins.

If in two tries, he fails to knock them all down, his score for that frame is the total number of pins knocked down in his two tries.

If in two tries he knocks them all down, this is called a spare and his score for the frame is ten plus the number of pins knocked down on his next throw (in his next turn).

If on his first try in the frame he knocks down all the pins, this is called a strike. His turn is over, and his score for the frame is ten plus the simple total of the pins knocked down in his next two rolls.

If he gets a spare or strike in the last (tenth) frame, the bowler gets to throw one or two more bonus balls, respectively. These bonus throws are taken as part of the same turn. If the bonus throws knock down all the pins, the process does not repeat: the bonus throws are only used to calculate the score of the final frame.

The game score is the total of all frame scores.

### Example input and output

Example 1: Gutter balls (all zero)

```
[0,0],[0,0],[0,0],[0,0],[0,0],[0,0],[0,0],[0,0],[0,0],[0,0]
```

-> 0

Example 2: All Threes

```
[3,3],[3,3],[3,3],[3,3],[3,3],[3,3],[3,3],[3,3],[3,3],[3,3]
```

-> 60

Example 3: All Spares with first ball a 4

```
[4,6],[4,6],[4,6],[4,6],[4,6],[4,6],[4,6],[4,6],[4,6],[4,6,4]
```

-> 140

Example 4: Nine Strikes followed by a gutter ball

[10,0],[10,0],[10,0],[10,0],[10,0],[10,0],[10,0],[10,0],[10,0],[0,0]

-> 240

Example 5: Perfect Game

[10,0],[10,0],[10,0],[10,0],[10,0],[10,0],[10,0],[10,0],[10,0],[10,10,10]

-> 300

## Deliveries

- Working Solution
- JUnit tests
- Solution should be well structured/packaged
- Your program should accept standard inputs and produce a standard output
- Design document (must be word document)