

## Bowling Programming Task

### Goal

- Your task is to write a small single-player bowling simulation game that can be used to kill some spare time. A player should be able to start a new game, by hitting enter simulate through the various rounds and get the scores per round presented as text output.

### Hints

- Please write down the complete code in one of the following languages: Java or Scala. Please consult us, if you instead prefer using another language.
- Please hand in the source code + a compiled, running version as a zipped archive.
- The game should run at least on a standard terminal as a small text-based client (no UI necessary)
- Please also consider the following code qualities: object-oriented programming principles, clean code, design patterns, testing, etc.
- Feel free to also use helpful libraries and frameworks, if necessary.

### Rules of the Game

- Every game consists of 10 rounds
- In every round, the player has two tosses
- In the first toss, the player can randomly bowl at most 10 pins
- In the second toss, the player can bowl randomly another (10 – number of bowled pins from the first toss) pins
- The score per round is calculated based on the number of bowled pins + additional bonuses if a strike or spare was achieved.
- A strike is accomplished when all 10 pins are bowled in the first toss already.
- A spare is accomplished when all 10 pins are bowled in two tosses.
- The bonus for a spare round is calculated based on the bowled pins of the first toss from the next round.
- The bonus for a strike round is calculated based on the bowled pins of the next round.
- In the very last round (i.e., round 10) a player may have an additional third toss, if he again achieved a strike or spare within this round.

### Test Example

1	2	3	4	5	6	7	8	9	10
X	9 /	5 /	7 2	X	X	X	9 -	8 /	9 / X
20	35	52	61	91	120	139	148	167	187