Ruby Challenge

Description

This project is designed to test your knowledge of backend web technologies and assess your ability to build a Ruby greenfield project with attention to software architecture and scalability.

Assignment

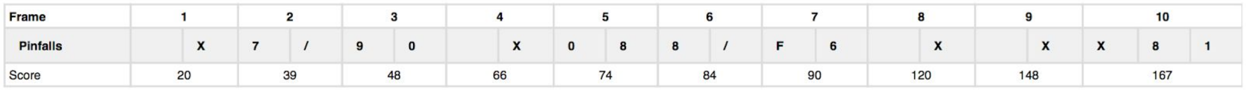
Create a command-line application to score a game of ten-pin bowling.

1. The program should run from the command-line and take a text file as input: ‘bowling-game.txt’
2. The content of the input text file (e.g., ‘game.txt’) for several players bowling 10 frames each. This would be like:

```
Jeff 10
John 3
John 7
Jeff 7
Jeff 3
John 6
John 3
Jeff 9
Jeff 0
John 10
Jeff 10
John 8
John 1
Jeff 0
Jeff 8
John 10
Jeff 8
Jeff 2
John 10
Jeff F
Jeff 6
John 9
John 0
Jeff 10
John 7
John 3
Jeff 10
John 4
John 4
Jeff 10
Jeff 8
Jeff 1
John 10
John 9
John 0
```

a. Each line represents a player and a chance with the subsequent number of pins knocked down.
b. An 'F' indicates a foul on that chance and no pins knocked down (identical for scoring to a roll of 0).
c. The input shall be valid (i.e., no chance will produce a negative number of knocked down pins or more than 10, etc). d. The rows are tab-separated.

3. The program should then output the scoring for the associated game. So for the above game for Jeff, the classic scoring would be written:

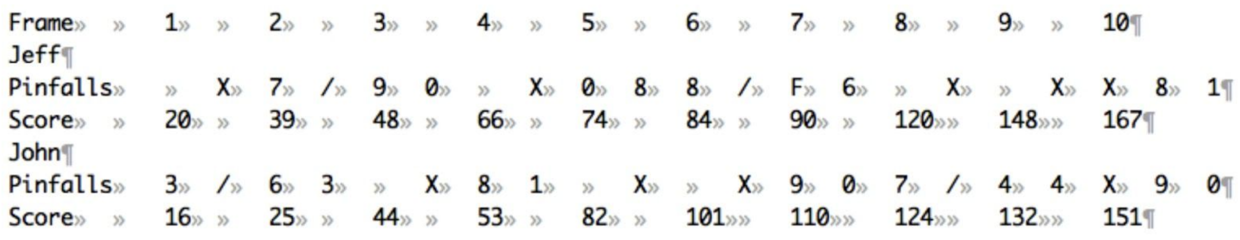


Frame	1		2		3		4		5		6		7		8		9		10		
Pinfalls		X	7	/	9	0		X	0	8	8	/	F	6		X		X	X	8	1
Score	20		39		48		66		74		84		90		120		148		167		

Your program should print out a similar score to standard out, in the format:

```
Frame       1       2       3       4       5       6       7       8       9       10
Jeff
Pinfalls        X   7   /   9   0       X   0   8   8   /   F   6       X       X   X   8   1
Score       20      39      48      66      74      84      90      120     148     167
John
Pinfalls    3   /   6   3       X   8   1       X       X   9   0   7   /   4   4   X   9   0
Score       16      25      44      53      82      101     110     124     132     151
```

Here is the same output with hidden whitespace revealed:



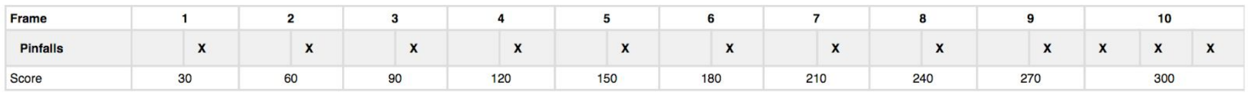
```
Frame»    »   1»   »   2»   »   3»   »   4»   »   5»   »   6»   »   7»   »   8»   »   9»   »   10¶
Jeff¶
Pinfalls»     »    X»  7»  /»  9»  0»   »   X»  0»  8»  8»  /»  F»  6»   »   X»   »   X»  X»  8»  1¶
Score»    »   20»  »   39»  »   48»  »   66»  »   74»  »   84»  »   90»  »   120»»   148»»   167¶
John¶
Pinfalls» 3»  /»   6»  3»   »   X»   8»  1»   »   X»   »   X»  9»  0»  7»  /»  4»  4»  X»  9»  0¶
Score»    »   16»  »   25»  »   44»  »   53»  »   82»  »   101»»   110»»   124»»   132»»   151¶
```

a. For each player, print their name on a separate line before printing that player's pinfalls and score.
b. All values are tab-separated.
c. As seen into the above output, the output should calculate if a player scores a strike ('X'), a spare ('/') and allow for extra chances in the tenth frame.

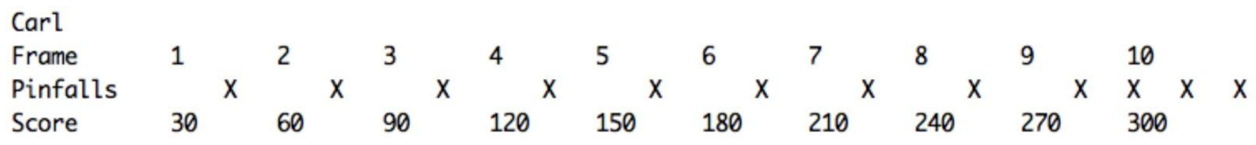
4. Your code will be evaluated on:
   a. Clarity, design, extensibility and maintainability.
   b. Testing and code coverage (e.g., for Ruby programs, using JUnit or other unit testing frameworks).

Further help:
Your program should be able to handle all possible cases of a game both including a game where all rolls are 0, all rolls are fouls (F) and a perfect game, where all rolls are strikes:

```
Carl 10
Carl 10
Carl 10
Carl 10
Carl 10
Carl 10
Carl 10
Carl 10
Carl 10
Carl 10
Carl 10
Carl 10
```



Frame	1		2		3		4		5		6		7		8		9		10		
Pinfalls		X		X		X		X		X		X		X		X		X	X	X	X
Score	30		60		90		120		150		180		210		240		270		300		



```
Carl
Frame       1       2       3       4       5       6       7       8       9       10
Pinfalls        X       X       X       X       X       X       X       X       X   X   X   X
Score       30      60      90      120     150     180     210     240     270     300
```

Deliverables

What you should deliver to Jobsity, a zip file containing:

- The source code for a project that satisfies the above bowling problem written in Ruby.
- A text file containing instructions on how to compile and run the project (Gradle, Maven, shell script).