



PGCert IT: Programming for Industry

Challenges 05 - Refactoring

This challenge requires you to refactor the given source code. It is a functional bulls and cows game but with many bad coding practices. You will refactor the code following good software practices. The optimum goal is that each method must contain no more than 3 lines of code.

You are also required to write a 1 - 2 pages reflection report on the following items:

- What refactoring techniques have you used to improve the source code?
- Why are you able or unable to refactor the code to have no more than 3 lines in each method?
- What are the pros and cons of having methods that are no more than 3 lines?

Notes:

- This challenge is worth **3%** of your final Programming for Industry grade.
- You should have the following source files for the challenge:
 - bullsandcows_bad.zip
- After completing the challenge, the program should still function as before.
- Zip your IntelliJ project for the challenge, including all the source files and your reflection report and submit the single Zip file before the due date.
- **IMPORTANT:** You will receive **0** mark if you made no attempt of refactoring the given source code.

Marking Guide

This challenge will be marked based on how well you have refactored the original source code. Here are some questions to consider for the programming style:

- Is the code well-structured?
- Is the code self-explanatory?
- Can you understand the code easily?
- Are all variables properly defined with meaningful and clear code?
- Have you removed code smells?
- Do you have any unit tests to ensure the correctness of the given source code?

Achieve the optimal goals AND/OR make great improvements on the code style AND write a comprehensive reflective report.	<i>5 marks</i>
Make an adequate amount of improvements on the code style and write a clear and detailed reflective report.	<i>3 marks</i>
Make some improvements on the code style and write a reflective report with basic points.	<i>1 marks</i>
Code cannot be compiled OR make very limited or no improvements on the code style; AND also write a poor reflective report.	<i>0 marks</i>