

Qualibrate Code Challenge 2019

Qualibrate
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Dear Challenger,

The code challenge is a series of brief tasks, that will demonstrate your full understanding on the software delivery and the concepts you are familiar to work on when producing a software product.

We tend to say that you create your own luck, so we rather say: success in your challenge!

Code Challenge Rules:

- No external code references
- All code should be developed by the challenger (you)
- If using an external copy-paste from other repository, please highlight that you are using code from an external repository
- Your code is your code, we will not use it, or sell it, or embedded anywhere, is purely for seize your skills
- You have unlimited time to complete the challenge
- You must notify via email about the completion of the challenge, and sending a GitHub/GitLab repository with your response of the challenge

The Challenge

What you need to do?

1. Develop a REST API that conforms to 2 of the entities describe in the code repository available in <https://github.com/alanjimenez1/qualibrate-api>
 - a. Use Spring Boot framework as your project base
 - b. Is your choice to add comments or lint annotations
 - c. Your API needs to be compatible with the Open API specification, you can choose Swagger or other tools to produce the references
2. Develop the test cases to test the endpoint of your API
 - a. You can choose your testing framework, or tool. Examples can be using curl command, or httpie, or postman, or insomnia
 - b. Provide the data requirements to test your API
 - c. Specify the ports and types required by the API
3. Your code needs to be version controlled, you choose the technology, our preference will be GIT, but SVN or others are recognized
4. You need to provide instructions on how to deploy and run your solution, including the versions of the software required to do it, and the minimum set of requirements
5. At the beginning of the challenge, you need to inform via email, when do you expect to complete the challenge, if you fail to communicate the estimate in time, your challenge will be dismissed. You have "carte blanche" to decide the time frame you need, so no pressure, no penalties, or rewards for slow or faster delivery.... Take your time, and finish the challenge

Evaluation Criteria:

Maximum Score: 100 points

- From the repository given (qualibrate-api) provide 50 words description of what you think the code does.
- Your code will be evaluated in the following criteria
 - The less lines of code the higher score (think about concrete, concise, less verbose code)
 - For, while, do/while, case statements have a penalty of 2 points each, vectorization and matrix operations instead, have a reward of 2 points each
 - Comments and blank lines are not considered lines of code, if interested in knowing which tool will do the analysis, use

CLOC from SourceForge

- Naming conventions, coding style, and linter clearance will be rewarded by 10 points. Be consistent with CamelBased, or under_scored variables, or your own style, same with opening and closing of braces, etc. All these little elements will be considered in the evaluation, with optional 5 points penalty or reward
- The most important thing is that your code does, or simulates what 2 of the entities in the provided API are doing

Extra Points:

You want to go the extra mile?

- Ok, if that was too simple, then you can show off your DevOps skills, and deploy your API in a AWS Elastic Beanstalk using Docker runtime. Please be aware that the costs incurred in deploying your API are for you to incur, we suggest to use the free tier.

***4 Extra Points**

- That being said, you can also show off, how you control origin requests, by also handling Cross Origin Resource Sharing (CORS) in your springboot request chain. By limiting the Origins to a specific domain but allowing subdomains per request. Example: From requests coming from <https://test.example.com> and <https://test.example2.com> origins, should filter only *.example.com.

***5 Extra Points**

- If you feel like this is too easy, then you can make your application/API to accept larger file sizes (Eg. 20MB+) since users like to upload some really nice iphone high resolution pictures.

***3 Extra Points**

- Ok, if that is not enough and you really want to blow it out of the park, then you can also include, a monitoring solution that shows, the number of requests made to your API, or perhaps the resources used by your container. Examples can be to use "Portainer" as a monitoring solution for your docker containers, or the platform API's to retrieve the metrics, is your choice.

***2 Extra Points**

- And if that is not sufficient challenge, then we suggest you write a minimum set of test cases, using test automation technologies of your choice, that demonstrates the automatic, and successful delivery of your software

***8 Extra Points**

- Extra credits will be given, when the minimum set of human intervention is required to make your solution work, count the number of clicks, keystrokes, even steps to put everything together, our reward is to the simplification of a one command, or one click to set all the show up...

***1 Extra Points**

- Last but not least, write another 30-word paragraph, to what did you learn along the way in this challenge, and you will also get an extra 7 points reward

***7 Extra Points**

Additional open questions: ***5 Extra Points Each (Total 10 extra points)**

1. If implementing a RESTful API what headers and response codes should I use for an UPDATE with no response?
2. How would you structure a JSON payload response for a paginated list of elements?

We wish you all the best, and we hope you find the Code Challenge exciting, and indeed challenging.

Communication

Your emails should be directed to:

- Krunal Krunal.sabnis@qualibrate.com
- Ricardo Ricardo.tapia@qualibrate.com
- Alan alan.jimenez@qualibrate.com

Success and enjoy the challenge!

Qualibrate Team

Inspiration notes:

The comfort zone is the great enemy to creativity; moving beyond it necessitates intuition, which in turn configures new

perspectives and conquers fears.

— *Dan Stevens*

Attitude is a little thing that makes a big difference.

— *Winston Churchill*