Qantas Money

Developer Challenge

2019

Intro

The following is a small coding exercise for you to work on. It helps us understand how you do what you do best – write great software. We want to see how well you build software and we are looking forward to chatting with you about your solution afterwards. We recommend you have a good look at the problem description before getting started.

We ask that you work on the solution by yourself and submit only your own code. This task shouldn't take more than a few hours, however we know people have busy weeks and if you need a weekend to work on this we understand.

When complete, please email the solution back to the individual who sent this to you. We will review your implementation with you during a follow-up interview.

Task Details

You are required to design and create a simple web crawler. It needs to take a URL as a parameter and create a tree of child pages linked to the URL. It's expected that your application provides deep-crawling solution, meaning that it goes through multiple levels in link hierarchy.

Create a simple API endpoint that would take URL as a parameter and return json representing the tree described above. Each node should have at least following fields: *url, title, nodes*. See example for more details.

You can use any frameworks or libraries suitable for the task. You might be asked why you made certain choices during interview.

End result should be a zip file that contains maven or Gradle project. It should also have a README file with instructions and potential assumptions you had to make during development.

Example

Response example:

```
[
        {
                "url":"http://goole.com",
                "tite":"Google",
                "nodes":[
                        {
                                "url":"http://goole.com/page1",
                                "tite":"Google Page 1",
                                "nodes":[
                                        {
                                                "url":"http://some-site.com/",
                                                "tite":"Some Site 1",
                                                "nodes":[
                                                        ...
                                                ]
                                        },
                                        ...
                                ]
                        },
                        {
                                "url":"http://goole.com/page1",
                                "tite":"Google Page 1",
                                "nodes":[]
                        }
                ]
        }
]
```

Assessment Criteria

You assignment will be marked based on following criteria:

1. Design
2. Code Style
3. Unit Testing
4. Complexity / Effort put in the project

Requirements were intentionally left quite loose, so you can put additional effort if you wish. The example would be making application more secure or add caching layer or develop it so it takes extra parameters for additional filtering etc.

Good Luck!

QANTAS