

## Digital Wave Finance AG

### Blockchain developer. The technical test

Many governments and businesses today use censorship software to monitor people's online activity and prohibit access to undesirable content. Fortunately, there's a technology that allows people to circumvent these restrictions, communicate securely, and hold oppressive regimes accountable: blockchain. For example, in 2018 a Chinese student showed how to avoid censorship with the Ethereum blockchain (<https://cryptobulls.info/chinese-student-censorship-ethereum>).

Therefore, we decided to create a smart contract that retrieves a text from a real-world API and stores it on the Ethereum blockchain. Please design and implement such a smart contract. You can use any programming languages and environment you want.

We would approach this task by answering the following questions but feel free to do it your way as well:

1. How would you store a message upon a creation of a smart contract? What is the fastest approach? What is the most cost-efficient approach? Should we be able to update previously stored text or not? How would this choice affect the code?
2. Smart contracts cannot access off-chain data (our API) directly. What is a typical solution for this? This is a very simple task, and you can implement a solution by yourself but what risks would it pose for the larger project? How would you develop production-ready code that needs to access off-chain data?
3. In order to test your code, you can use any API that outputs a text message. For example, the Cat Fact API (<https://catfact.ninja/>) is nice, outputs interesting facts about cats and is easy to use.
4. Please show that your solution works and solves the task. How do you usually test your programs and smart contract solutions? What kind of tests do you usually write along with your solution? What tests would you suggest to make sure that this smart contract is ready to use?
5. What are the potential security risks of your solution and how to minimize them?
6. How would you make this solution profitable?

We don't expect you to develop a perfect solution but rather would like to see a prototype that solves the task and suggestions how to further improve it. One can achieve a result with less than 100 lines of code (however, don't be restricted by this number).

If you have any questions, please do not hesitate to contact me via email [m.osmanov@digitalwave.finance](mailto:m.osmanov@digitalwave.finance)

Best of the luck!

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