

# BLOCKCHAIN ANALYST CHALLENGE

Congratulations on making it to the challenge stage of the interview process! 🎉

In this stage we will check your technical and analytical skills to ensure you have the requirements to meet the challenges of the day to day job.

Details are set out below but if you have any questions, please do not hesitate to reach out. We expect this challenge to take a maximum of 2 hours to complete. You will have until Friday, June 16, 2023 to do so. We know life can be busy at times!

Please send your results to [talent@stakingrewards.com](mailto:talent@stakingrewards.com)

## Deadline

Friday, June 16, 2023 @ 6 p.m. UTC

### 1. Familiarize yourself with our custom Integrations Language (Pipescript)

- a. You can find the docs and examples [here](#).
- b. Download the required files:
  - i. [stakingrewards-pipescript.tgz](#)
  - ii. [pipescript-vscode.vsix](#)
- c. Install Pipescript on your local machine.
  - i. To install please follow the instructions in the documentation. The only different step is to install pipescript from the .tpz by running the below command from the terminal.

Unset

```
npm install -g stakingrewards-pipescript.tgz
```

- d. Write any short piece of code that makes use of the `#skip_on_error` feature and explain in your own words how this works. You may use diagrams to explain how pipescript handles errors. We expect something like:
  - i. Query any API to get a numerical value
  - ii. Use the numerical value to do some calculations.
  - iii. Output the final value
  - iv. Run the same script, but replace the API with one that fails but make use of the `#skip_on_error`. What happens to your final output?

## 2. PancakeSwap Data Script – 30 minutes

- a. Find any public RPC endpoint
  - i. (hint: if you have BSC added to your Metamask wallet, you should be able to find the endpoint in your Metamask settings)
- b. Find the smart contract address and ABI for:
  - i. The CAKE token
  - ii. The main Stake Cake Syrup Pool [here](#).
- c. Write a simple PPS script that outputs the following metrics:

Metric	Formula
Total Supply of CAKE Tokens	Get the totalSupply() from the CAKE contract
Total Staked CAKE in the main syrup pool	Get directly from the syrup pool contract
The USD Value of Staked CAKE	Price of CAKE (any API will do, but in our opinion easiest is coingecko) multiplied by total staked CAKE

- d. Write a simple PPS script that runs continuously until the Total Staked CAKE changes.

## 3. Ethereum Staking Reward Calculation - 30 minutes

- a. What would be the estimated APR for staking ETH if the staking ratio of ETH goes from 15% to 50%?
  - i. References:
    1. [Ethereum.org Docs](#)
    2. [BitMex Blog](#)
- b. Calculate the result in a programming language of your choice