Dataclair Assignment for Data Scientist Positions

This assignment is intentionally very general and open-ended. It gives you a lot of freedom in how you approach it, but it indeed puts more responsibility on you as well. It's because this is exactly the way how we see this role.

We would like you to learn as much as you find useful about the ML/RL technique of Multi-armed bandit (MAB). How much? It's entirely up to you and your judgment. Then we would like you to show us in a suitable way that you were able to grasp enough practical knowledge of MAB so that you can start delivering projects based on it.

How will you approach it? Again, that's up to you. But we have a suggestion:

- define a suitable toy problem on which you'll illustrate your newly acquired knowledge (not too easy, not too hard)
- get yourself nice data for this problem – either download them somewhere or create synthetic ones
- prepare a Jupyter notebook in which you code your solution (preferably in Python) to the toy problem based on your data using MAB
- you can use whichever MAB tools/libraries you like; you can even code it on your own
- if you code your own MAB, that's cool and perfectly legit, but it will probably need some explanation/reasoning on why you didn't use something already existing
- on the other hand, if you use something existing, just make sure it's not too easy (maybe compare different models, e.g., linear vs. non-linear, or different hyperparameters, etc.)
- prepare an interactive presentation for us where you're going to convince us
- by "interactive presentation" we don't mean any crazy top-management-consulting-cool-style fancy-pants slide deck; it can be a decent concise few-slide PPT with the problem formulation, and then all the rest in a nicely organized Jupyter, so that we can go step-by-step in it and understand it
- then, we'll have a meeting with some of your potential future peers (team leads or other senior data scientists), you'll guide us through your presentation, and then we'll have a nice, friendly, yet deep-diving discussion on what we've just seen
- and you'll get some feeling about who we are too

How much time do you have to prepare this? Again, it's up to you and your judgment of how much time is probably appropriate under these circumstances. We have some approximate ideas, so let's see if we meet there ;-)

If you have any questions, feel absolutely free to ask at petr.hirs@o2.cz or brydl.ivo@o2.cz. Asking and answering good questions is an inherent part of our job too. So, if you're going to ask, the way how you ask can indeed make a difference.