

Analytics Engineer Case (all levels)

JustDice

Preface

JustDice is the European market leader of rewarded apps & games: Our products are enjoyed by more than 100 million players worldwide and we've distributed over \$40 million in cash & rewards to our users!

Having such a large user base provides us with an enormous opportunity to optimize our processes and decision making through data driven insights and hypothesis testing.

The job of an Analytics Engineer is to identify those opportunities, propose, and build solutions.

Business Model

JustDice is what we refer to as a *publisher*.

We produce games & apps, and advertise these in a number of different mediums (*networks*).

When a user installs one of our products through those advertisements, the *network* responsible for bringing us that user charges us a fee.

The fee charged by a network is an arbitrary value (*bid*) that we have full control of. In theory, higher fees would yield more, and better, users - which doesn't necessarily mean more profits.

Users that downloaded our products are prompted to download and play *partner apps* to gain coins, which in turn, they can use to cashout money prizes.

Whenever a user downloads any of those products, we also get paid a fee for acquiring a user for that *partner app*.

That revenue generated by the user install varies, as it depends on a combination of 'user quality' and 'commercial conditions'.

The Case Exercise

Disaster has occurred at JustDice!

The data team, alongside the management team, were scuba diving on an offsite event at the Caribbean, they were mauled to death by vicious sea turtles (don't worry we are fine).

You have just been hired, alongside a new CEO, and management team to replace the old employees.

Your task is to help the leadership team to understand the overall financial situation of the company, its main KPIs, as well as any relevant findings that can be driven from the data.

The only tools at hand are a handful of undocumented data, your brain and wits.

The deliverable should be a zip or repository, containing whatever code you used, as well as a presentation of your findings (in any format of your liking) to the new management team.

The stakeholders that will be attending are responsible for the overall financial condition, the user acquisition process, and the products (apps & payout service). They may have different concerns regarding the company and its processes.

Evaluation Criteria

(in no particular order of importance)

1. Code quality. (we use python)
 - a. Data wrangling skills.
 - b. Best practices
2. Presentation format.
 - a. Context/Hypothesis
 - b. Analysis to back it up
 - c. **Findings/Conclusions/Next Steps**
3. Business relevance.
 - a. Context/Impact
 - b. Optimization/Opportunities
 - c. **Capacity to abstract business model into data and vice-versa.**

A successful case would present the relevant (must know) information to the new stakeholders in a resolute and efficient manner. It would enable and provoke the business to take the right actions.

Hypothesis can be derived from data or from logic. Actions/Ideas can be suggested accordingly. It's okay to hypothesize on things you don't have data on, or on which the data is not clear.

While it's not required, you can also make MVPs or POCs of data products, such as models (statistical and/or ML), or dashboards - as long as they serve a purpose.

Information presented should serve a valid purpose for its intended audience. We are not looking for someone to just pull & show numbers.

We will evaluate your data wrangling skills, coding skills, critical thinking, and business knowledge. We do not expect you to be an expert in all those fields of knowledge.

We will use the result of this test to best evaluate which role and seniority you would be a good fit for.

Put yourself in the stakeholders shoes. When they see your presentation, will they know how the company performed and what are the best opportunities to work on?

Good luck, have fun!