## Case Study

### Background

In our Traveloka app, we are experimenting with our swipeable banners (also known as carousel banners) consisting of many hotels which are provided by *the content system*. We want to test different hotel ranking strategies with the following configuration:

* **Population dimensions:**   
  interface: mobile-android, mobile-iOS  
  identified: true, false
* **Goal:**   
  Maximize engagement
* **Variants/treatments,** evenly split across all variants:
  + Existing algorithm: control,
  + Algorithm 1: alt\_a,
  + Algorithm 2: alt\_b

The user flow works like follows:

1. When a user arrives at the homepage, *the content system* will first allocate the variant to the user. **Successful allocation** is logged in the mock\_experimentation\_log,
2. From the variants given, *the content system* will use the variant parameter to decide which algorithm that will rank the sequence of swipeable hotel banners,
3. For each user*, the content system* runs the algorithm according to the allocated variant
4. When user **successfully** viewed/seen the banner, it will get tracked as CONTENTS SEEN in mock\_homepage\_carousel\_log,
5. When user engaged with the banner, it will get tracked as CONTENTS ENGAGED in mock\_homepage\_carousel\_log ,

### Task

1. Summarize the findings and result of the experiment
2. Provide the recommendation for this experiment. Which algorithm should we ship?

Hint: identified flag affects the user experience

### Notes

* State all the necessary assumptions you made to provide recommendations
* You are free to use any resources online that may help you to do your work
* Don’t forget to your citation about the statistical decision framework
* We do recommend using a notebook for Python/R
* You are required to submit the codes as a part of the submission documents
* Feel free to ask the interviewer any questions/clarifications

### Appendix

The excerpts from the database are given and described in the following .csv files

mock\_experimentation\_log.csv

Metadata:

|  |  |  |
| --- | --- | --- |
| **Field name** | **Type** | **Description** |
| event\_timestamp | DATETIME | Timestamp of the first successful allocation to the experiment |
| unit\_id | BYTES | User's unique identifier |
| identified | BOOLEAN | Flag of the user that is identified before |
| interface | STRING | Interface of user's device |
| treatment | STRING | The type of allocated treatment |

mock\_homepage\_carousel\_log.csv

Metadata:

|  |  |  |
| --- | --- | --- |
| **Field name** | **Type** | **Description** |
| event\_timestamp | DATETIME | Timestamp of the logged user interaction |
| unit\_id | BYTES | User's unique identifier |
| identified | BOOLEAN | Flag of the user that is identified before |
| interface | STRING | Interface of user's device |
| event\_name | STRING | Interaction type, CONTENTS SEEN logs user banner view, CONTENTS ENGAGED logs user engagement such as clicks and swipes |