

SKYSCANNER OFFER AND DEMAND COMPARISON

Follow-up milestone

Context

Since the beginning of the project, the Context it is almost the same. The only significant change is in the Project Scope: Instead of searching offer and demand by route and date, including day, those dates will be grouped by month, so the amount of data is reduced and is easy to analyze trends. The user searches are filtered by the Month View tool.

Project planning

The planning has changed. Not the components and dependencies but the time for each is completely different.

The User Demand pipeline that processed all the data has been delayed one month due to the permission to access that data. The user searches data is only available in production environment and from the whole process to get the necessary permissions to query the data base where this data is stored, took more than 40 days.

Luckily, the data processing it needed was very similar than the Flights Offer pipeline and the whole pipeline was written in only one week. The quality of the code is not the best, but enough for the Server and Web UI to feed from the User Demand Pipeline.

This component of the Skyscanner Offer and Demand comparison system can be improved from now until the final deliver of the project.

Methodology

The project still being developed using Extreme Programming. Thanks to that methodology, the new architectures could be tested in one week and see if it fitted with the comparison needs.

For example: [OpenTSDB](#) was a promising option for storing all the data, after a quick software design session, I spent three days testing, writing the implementation of the component for [OpenTSDB](#). After that, I realized that it had some limitations and it was not the best solution.

Thanks to the fast loops of activities in Extreme Programming, this risk was found and solved. With other methodologies like Cascade or RUP, this could have been an important problem for the whole project.

Alternatives Analysis

From the initial plan to the actual one, there is only one change, but in the middle, there has been six changes:

1. Reading user data using an [AWS Lambda](#).
2. Using an [AWS Lambda](#) and an [API Gateway](#) as *Serverless Framework* for the comparison
3. Storing data in [OpenTSDB](#)
4. Storing data in Grappler (Skyscanner software that store metrics)
5. Use Grafana to display the comparison dashboards
6. Storing data in [AWS S3](#)

The only one that was actually made, is the sixth, storing data in to [S3](#) instead of an [RDS database](#) because of the price of it.

[S3](#) is cheaper than [RDS](#) but slower if it has to read too many records. The data pipelines changed the writing model in order to avoid the server reading too many records.

Knowledge integrations

The most important subject related to this project's development are: AS (Software Architecture), DBD (Data Bases Design), CAP and LP (Programming Advanced Concepts and Programming Languages), ER (Requirements Engineering) and PES (Software Engineering Project). Mostly AS and DBD.

Both pipelines contain a lot of code, a lot of transformations from one object to another and dependent on the environment, input and output it runs with. Some patterns learnt in AS has been applied in order to change and maintain it easily.

The way the data was stored grouped and read it, is efficient thanks to a lot of concepts learnt in DBD.

Apart from those two, CAP and LP helped understanding complex languages paradigms and functional programming, ER has been very important when changing the technologies or architecture (Alternatives Analysis), last but not least, PES is being useful for the whole project development.

Laws and regulations

This project does not need any regulation nor law.

The GDPR (General Data Protection Regulation) does not affect the Skyscanner Offer and Demand Comparison, all users data is private and anonymous. Searches are counted, but the identity of the user that commit the search is discarded in the beginning of the whole data processing.

Also, is important to take into account that it is an Skyscanner internal tool, so only Skyscanner employees will be able to use it.

Initiative and decisions

During the development of the Skyscanner offer and demand comparison, there has been a lot of changes, as you can see in the alternative analysis section.

All the changes and decisions were proposed by me and have been discussed with the director and the team responsible of the technology I would use.