

Case Study

Travel Search and Booking Platform

AltexSoft Creates a Customizable Travel Search and Booking Platform

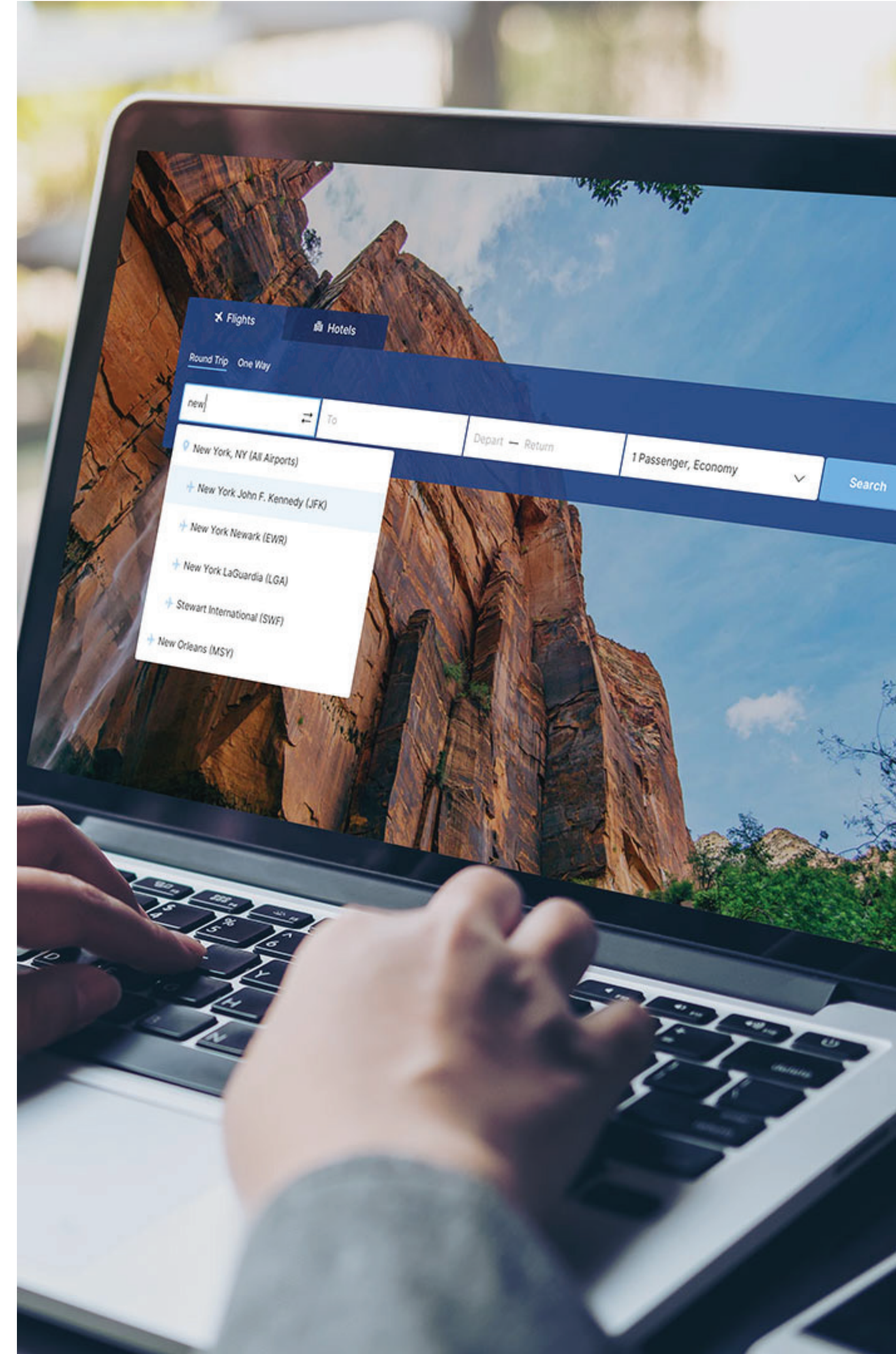
.NET Core 3.1, Redis, MS SQL Server, MS Azure Cloud, Docker, Terraform, Vue.js



Background

AltexSoft has extensive experience with travel products for online travel agencies (OTAs). One of the key systems that OTAs use is a booking engine that integrates with Global Distribution Systems (GDSs) and other travel product suppliers.

To reduce time to market for products with booking functionality, the AltexSoft team decided to create a set of search and booking modules with pre-integrated supplier APIs, which can serve as a basis for various travel projects, regardless of their business logic. This platform helps save money spent on supplier API integration and reduces time to market for our clients. The modules are customizable to let travel businesses tailor them to their specific needs. Currently, the platform has flight APIs integration with hotel APIs underway.



Challenges

Creating this platform, our experts dealt with the following challenges:

- 1.** Explore the key bottlenecks of travel supplier integration
- 2.** Integrate suppliers' flight APIs
- 3.** Map search results from different suppliers
- 4.** Build a customizable set of integration modules
- 5.** Create a responsive UX and the demo website

Value Delivered

1. Identifying pain points of supplier API integration and booking engine development

Working on this platform, our team wanted to create a customizable solution that would work for different types of travel businesses. To make it happen, the team gathered data from travel-related engagements, interviewed clients and members of product teams. This helped pinpoint the bottlenecks and challenges that developers face building search and booking software for travel businesses. One of the key difficulties is working with legacy SOAP APIs that GDSs use and integrating them into search and booking engines.

3. Creating a travel domain data model to map search results from different suppliers

Different GDSs and suppliers send search results using their own unique data models. Since the platform integrates multiple suppliers with intersecting inventories, these results must be mapped to each other. Additionally, the data models that suppliers use are often cryptic and difficult to understand for an ordinary travel professional. The AltexSoft team designed a **travel domain data model**. It maps and presents results coming from various suppliers in a single format that can be understood by anyone, regardless of their technical skill.

2. Managing the connection with suppliers via APIs

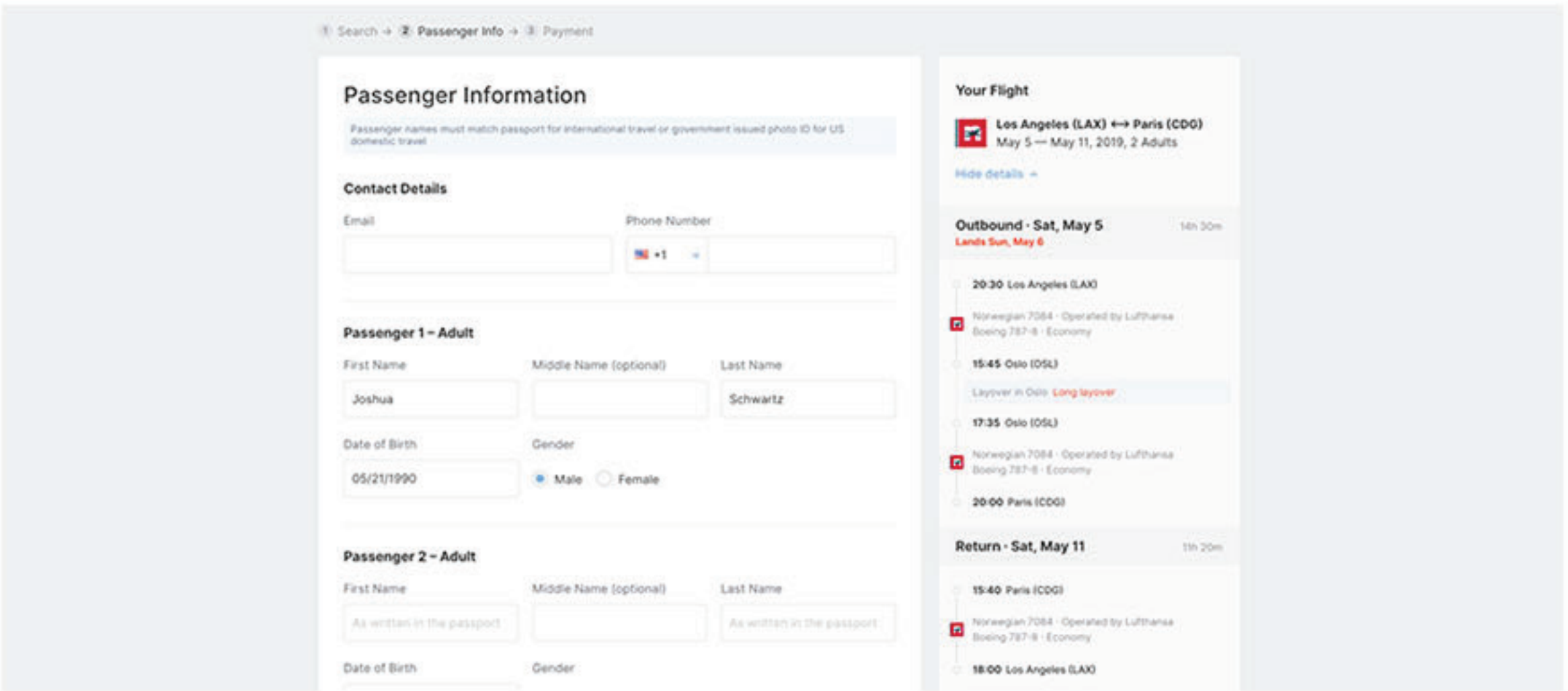
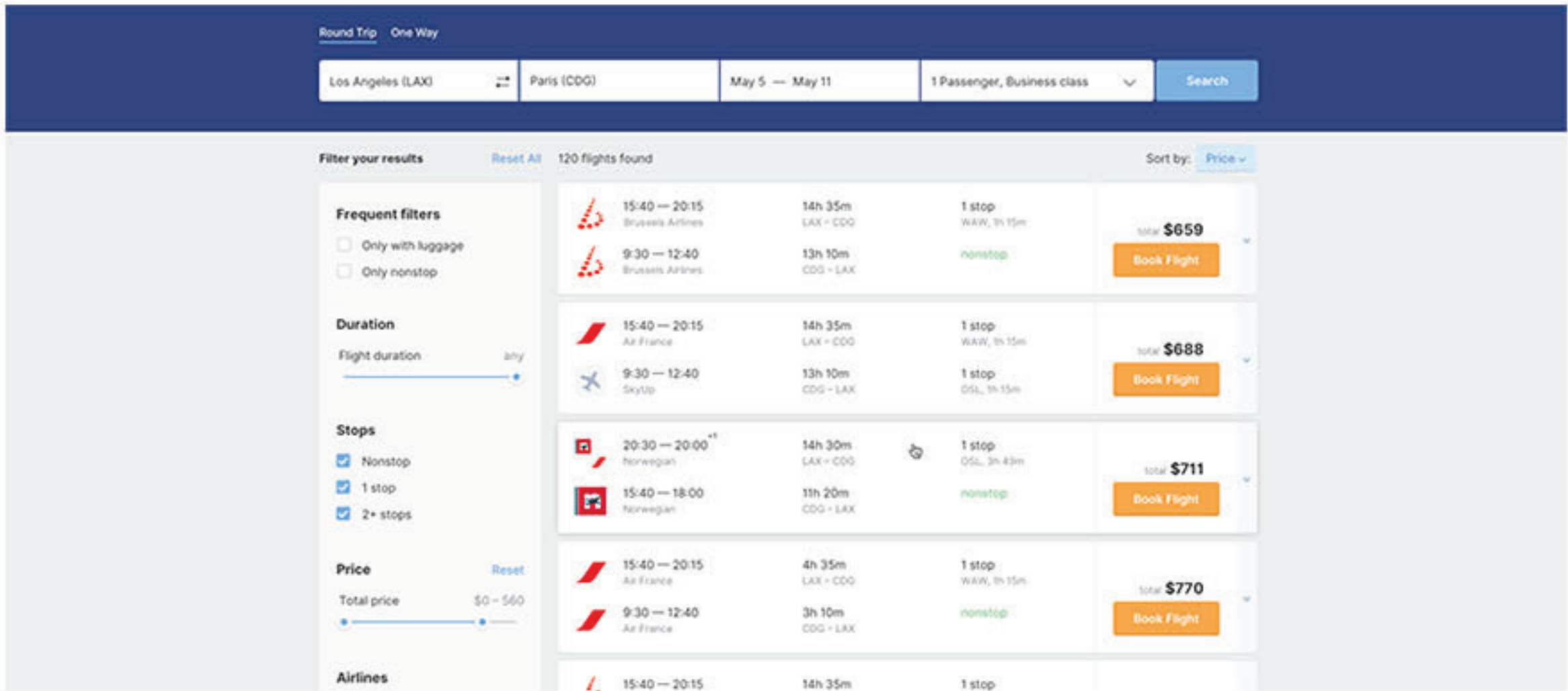
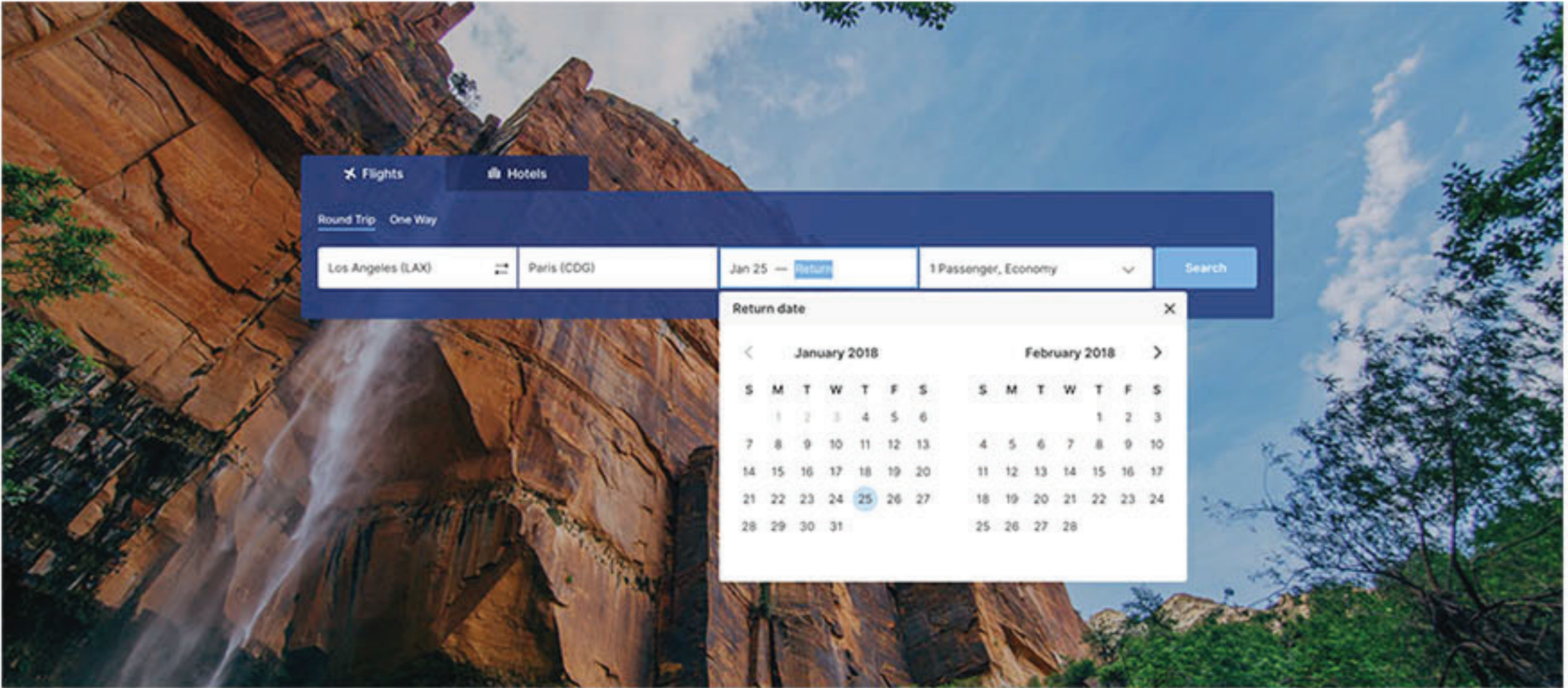
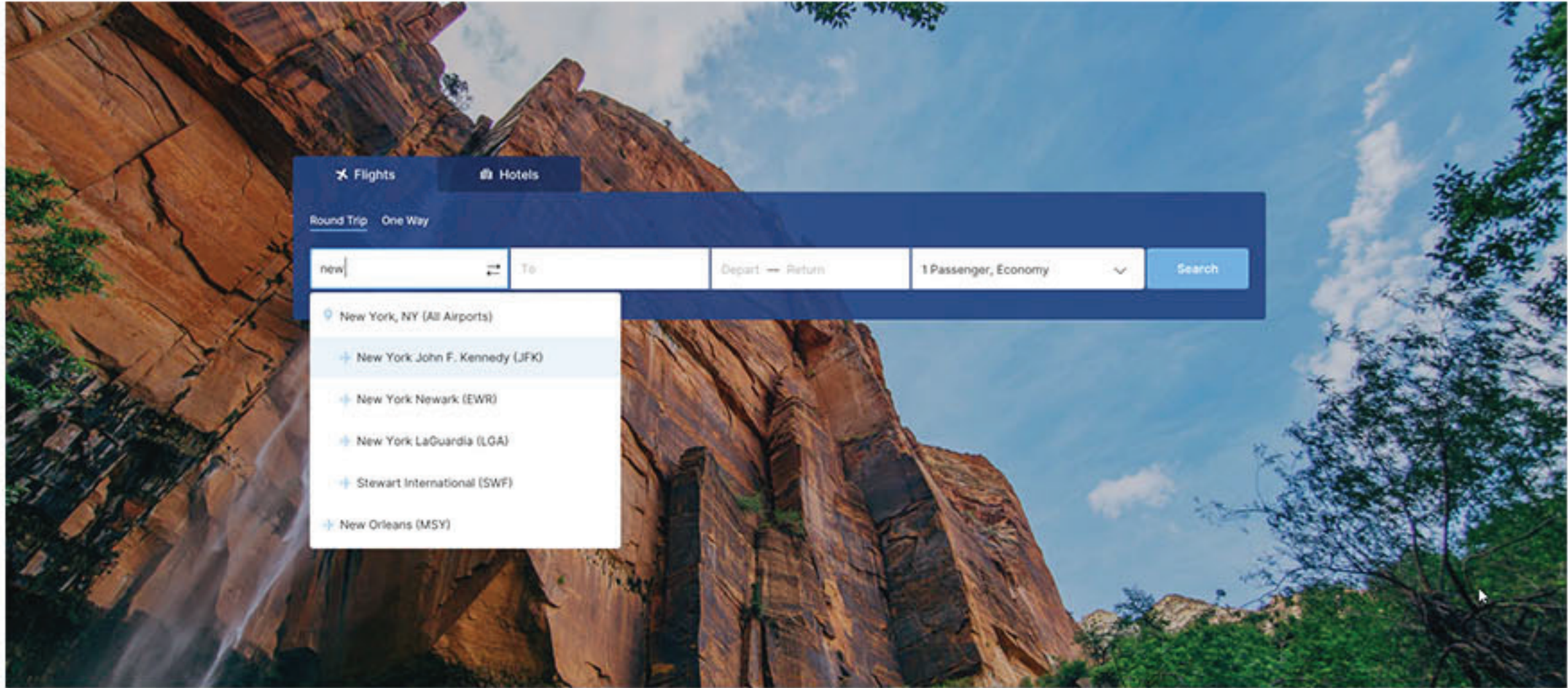
Our team started with flight API integration. The team used **GDS APIs** as well as APIs by other travel product suppliers to access authorization, flight and fare search, booking, and PNR management. The current roadmap of the project includes further integrations with hotel bed banks and expanding flight content and ancillary access.

4. Creating a modular platform with RESTful access to suppliers

Our goal was to make the platform agnostic to the unique business logic of search, booking, and commission engines that travel players use. This means that the supplier connections can be easily integrated into existing systems of travel businesses. The platform integrates complex supplier APIs, providing **RESTful JSON-based** connection to the client's business logic. The platform's modular architecture allows travel businesses to choose which types of supplier services they need to operate, including authorization, search, booking, and PNR management. The platform is built using .NET Core 3.1.

5. Designing a booking website for demonstration purposes

To demonstrate the platform's functionality, we've created a client-facing website. The design is minimalistic and has various navigation elements, like a flight ticket search box, dropdown calendar, and a text-based chatbot capable of search and booking. The interface was created using **Vue.js** and can be further customized. The team used a **CI/CD pipeline** for automated regression testing. The demonstration website together with the platform modules are deployed on **Azure Cloud**.



Approach and Technical Info

The project is ongoing, the team includes ten professionals: **a solution architect, a project manager, a business analyst, 2 backend engineers, 2 frontend engineers, a UX designer, a QA engineer, and a DevOps specialist.**

The technology stack of the project included **.NET Core 3.1, Redis, MS SQL Server, MS Azure Cloud, Docker, Terraform, Vue.js.**

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