Test assignment - Customer Data Separation
Car Rental Gateway 2019

Car Rental Gateway is a vehicle rental distribution platform. This SaaS-based ecosystem offers a full solution that meets all modern ecommerce needs. The platform does not impose commercial restrictions on the deals between the suppliers and retailers - all parties are free to agree upon their own custom rates.

As an off-the-shelf solution supporting all types of vehicle rental, including transfer services, Car Rental Gateway boosts business for all parties and facilitates growth.

Overview

Car Rental Gateway provides a car rental distribution platform for distributors like brokers, OTA-s (Online Travel Agencies), airlines etc. The customers of distributors are the end-users who are renting the vehicles.

Different countries have different regulations, how and where to store personal customer data (i.e name, address, e-mail, phone number). For example, US has a requirement that all data of their citizens is stored in US servers. Similar requirements are also in EU.

Personally identifiable information (PII) used in Car Rental Gateway

- Full name
- Home address
- Email address
- Date of birth
- Telephone number

Problem

If a car rental booking is created in Car Rental Gateway, then all end-user data is stored in booking. Booking belongs to a distributor and the separation is made by the ID of distributor. All bookings and related PII is stored in EU.

There are lot of problems with this approach:

- Simple typo in code may expose PII to other distributors (by leaving out the ID of distributor from queries)
- Data is not actually separated between distributors.
- US customer data is stored in EU which is not allowed.

Requirements

- PII is not stored in booking
- The location of PII storage can be defined by customer residence country
- Customer data is separated by distributor
- Customer data lookup is fast

Features

- As a distributor, I am able to store, modify, retrieve, delete customer data
- As a distributor, I am able to search customer data by knowing the name or e-mail address of the customer

Task

How to solve the problem?

- What would be the architecture of such solution? (description, diagram if needed)
- What technologies would be suitable?
- Create a proof of concept

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