Web Engineering Report

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1 Introduction

Using the provided JSON to populate the database, the API is able to handle different requests, defined in the documentation along with some examples.
For running both the API and the front-end, there are steps described in README.MD file.

2 Technologies

For the development of this API, several technologies were used:

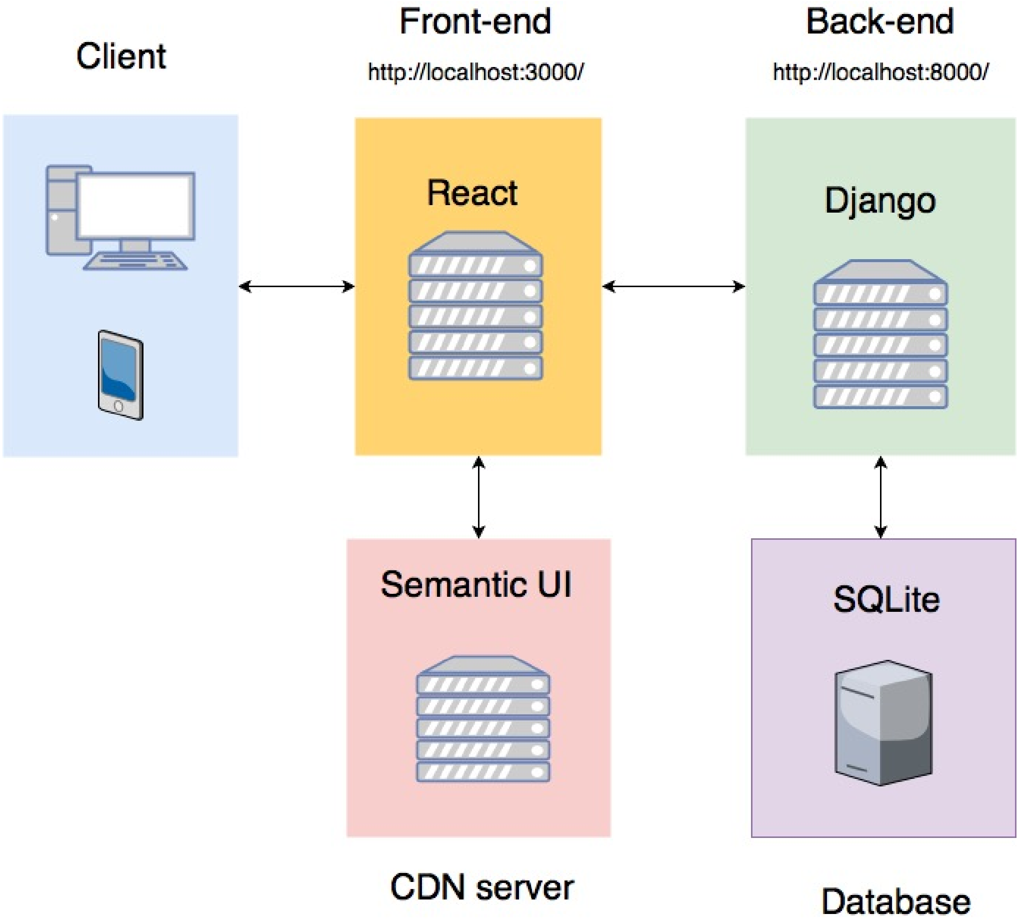
- Python, along with the framework Django.
- SQLite database for data persistence.
- React (JavaScript) for building the front-end
- Semantic UI (JavaScript) for designing the front-end

3 Justification

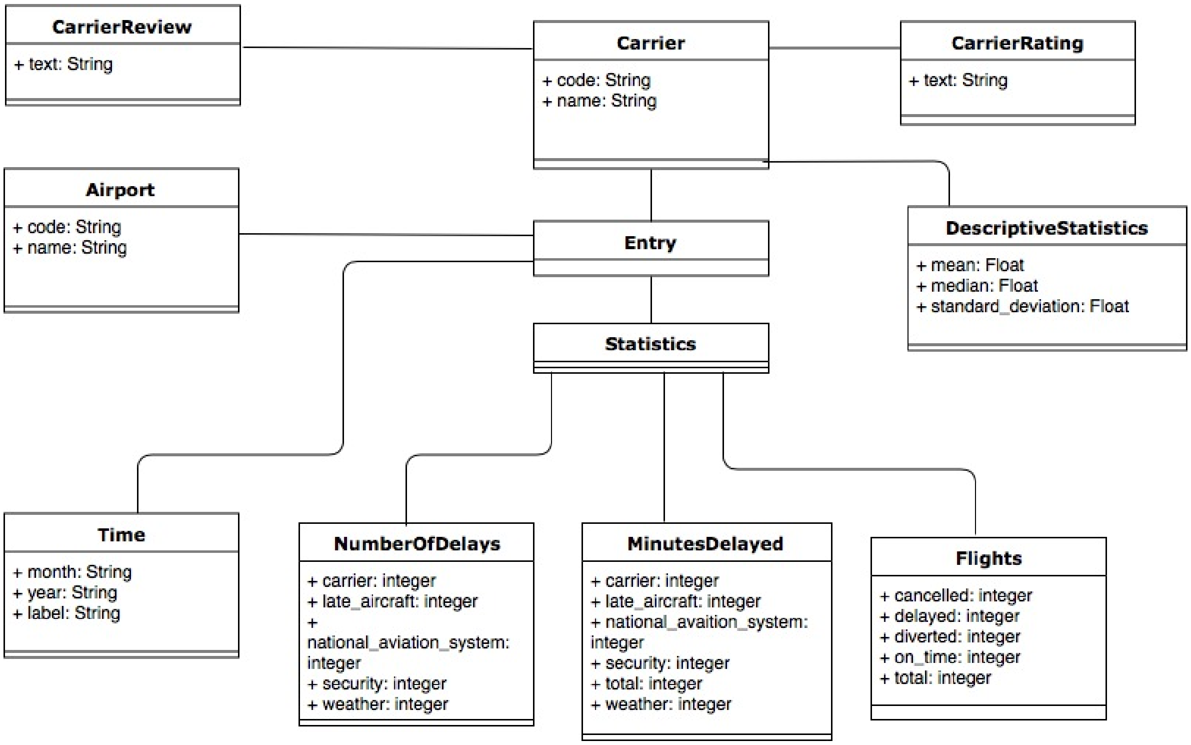
Django is a great framework with comes along with the package "Django rest framework" which is a powerful and flexible toolkit for building Web APIs.
For the persistence of the data, choosing SQLite was due to the easiness of installing and the possibility to dump the database and sending/uploading it directly on Github.
SQLite is great for the development stage. For production other services may be used.
Django is great for managing databases because it provides a layer of abstraction. This means that it is not neccessary to write raw SQL code (This does not mean it is not possible).
For exporting data as CSV, another Pyhton package is used: "django-rest-framework-csv".
React is a JavaScript library for building user interfaces. It is communicating

with the Django powered back-end server by using JSON.
Semantic UI is an easy to use responsive component framework for theming web pages. For faster load times, we are using the CDN.

4 High level architecture



5 Schema of the database


CarrierReview
+ text: String
Carrier
+ code: String
+ name: String
CarrierRating
+ text: String
Airport
+ code: String
+ name: String
Entry
DescriptiveStatistics
+ mean: Float
+ median: Float
+ standard_deviation: Float
Statistics
Time
+ month: String
+ year: String
+ label: String
NumberOfDelays
+ carrier: integer
+ late_aircraft: integer
+ national_aviation_system: integer
+ security: integer
+ weather: integer
MinutesDelayed
+ carrier: integer
+ late_aircraft: integer
+ national_avaition_system: integer
+ security: integer
+ total: integer
+ weather: integer
Flights
+ cancelled: integer
+ delayed: integer
+ diverted: integer
+ on_time: integer
+ total: integer