# 5. TEchnical framework

This project is developed by Ruby on Rails framework. Ruby on Rails, or Rails is server-side web application framework written in Ruby programming language under the MIT license. Rails is model-view-controller (MVC) framework providing default structures for a database, which this project use PostgreSQL, a web service and web pages. There are many framework in many programming languages but Rails allows developers to write less code while accomplishing more than many other languages and frameworks.

ref: <http://guides.rubyonrails.org/>

| **Program and extension** | **Version** |
| --- | --- |
| ruby | 2.3.1 |
| Rails | 4.2.6 |
| Postgresql | 0.18 |
| sass-rails | 5.0 |
| coffee-rails | 4.1.0 |
| haml | 4.0.7 |
| materialize-sass | 0.97.7 |
| font-awesome-sass | 4.6.2 |
| devise | 4.2.0 |
| aws-sdk | 1.6 |
| paperclip | 4.3 |
| braintree | 2.49.0 |

**1. Model**

1.1 PostgreSQL

PostgreSQL is a powerful, open source object-relational database system. It has been actively developed more than a decade and proven an architecture that has earned it a strong reputation for reliability, data integrity and correctness. It also support all major operating systems including Linux, UNIX and Windows. PostgreSQL boasts Multi-Version Concurrency Control(MVCC), point in time recovery, tablespaces, asynchronous replication, nested transactions (savepoints), online/hot backups, a sophisticated query planner/optimizer, and write ahead logging for fault tolerance.

ref: <https://www.postgresql.org/>

**2. View**

2.1 Haml

Haml (HTML abstraction markup language) is based on one primary principle: markup should be beautiful. It’s not just beauty for beauty’s sake either; Haml accelerates and simplifies template creation down to veritable haiku. Haml is used for cleanliness, readability, and production speed.

ref: <http://haml.info/>

2.2 Sass

Sass is an extension of CSS that adds power and elegance to the basic language. It allows you to use variables, nested rules, mixins, inline imports, and more, all with a fully CSS-compatible syntax. Sass helps keep large stylesheets well-organized, and get small stylesheets up and running quickly, particularly with the help of the Compass style library.

ref: <http://sass-lang.com/>

2.3 CoffeeScript

CoffeeScript is a little language that compiles into JavaScript. Underneath that awkward Javaesque patina, JavaScript has always had a gorgeous heart. CoffeeScript is an attempt to expose the good parts of JavaScript in a simple way. The code compiles one-to-one into the equivalent JS, and there is no interpretation at runtime.

ref: <http://coffeescript.org/>

2.4 Materialize

Materialize is a modern responsive front-end framework based on Material Design, created and designed by Google. Material Design is a design language that combines the classic principles of successful design along with innovation and technology. Google's goal is to develop a system of design that allows for a unified user experience across all their products on any platform.

ref: <http://materializecss.com/>

2.5 Font Awesome

Font Awesome gives you scalable vector icons that can instantly be customised - size, colour, drop shadow, and anything that can be done with the power of CSS.

ref: <http://fontawesome.io/>

**3. Controller**

3.1 Amazon S3

Amazon Simple Storage Service (Amazon S3), provides developers and IT teams with secure, durable, highly-scalable cloud storage. Amazon S3 is easy to use object storage, with a simple web service interface to store and retrieve any amount of data from anywhere on the web. With Amazon S3, you pay only for the storage you actually use. There is no minimum fee and no setup cost.

ref: <https://aws.amazon.com/s3/>

3.2 Braintree

Braintree is a simple, robust way to accept payments or enable buying from almost anywhere, in your mobile app or online. Braintree’s easy integrations give customers access to multiple payment methods, simple pricing, top-notch protection, and world-class support. Braintree provides its customers with a merchant account and a payment gateway, along with various features.

ref: <https://www.braintreepayments.com>

3.3 Facebook login

Facebook Login gives TripAdvisor users a seamless experience across multiple channels. People plan their trips on the TripAdvisor website and then take their itineraries on the go with their mobile devices. This is all made possible by Facebook Login.

ref: <https://developers.facebook.com/>