

## Problem Statement

**Foodee** provides food delivery services to corporate clients, by creating a service for these clients to order catered meals from local partnered restaurants.

Orders are processed through an online platform where partnered restaurants can post their menus and then corporate clients can easily make customizable orders based on dietary needs. However, these Restaurant Partners currently cannot view any metrics related to their performance.

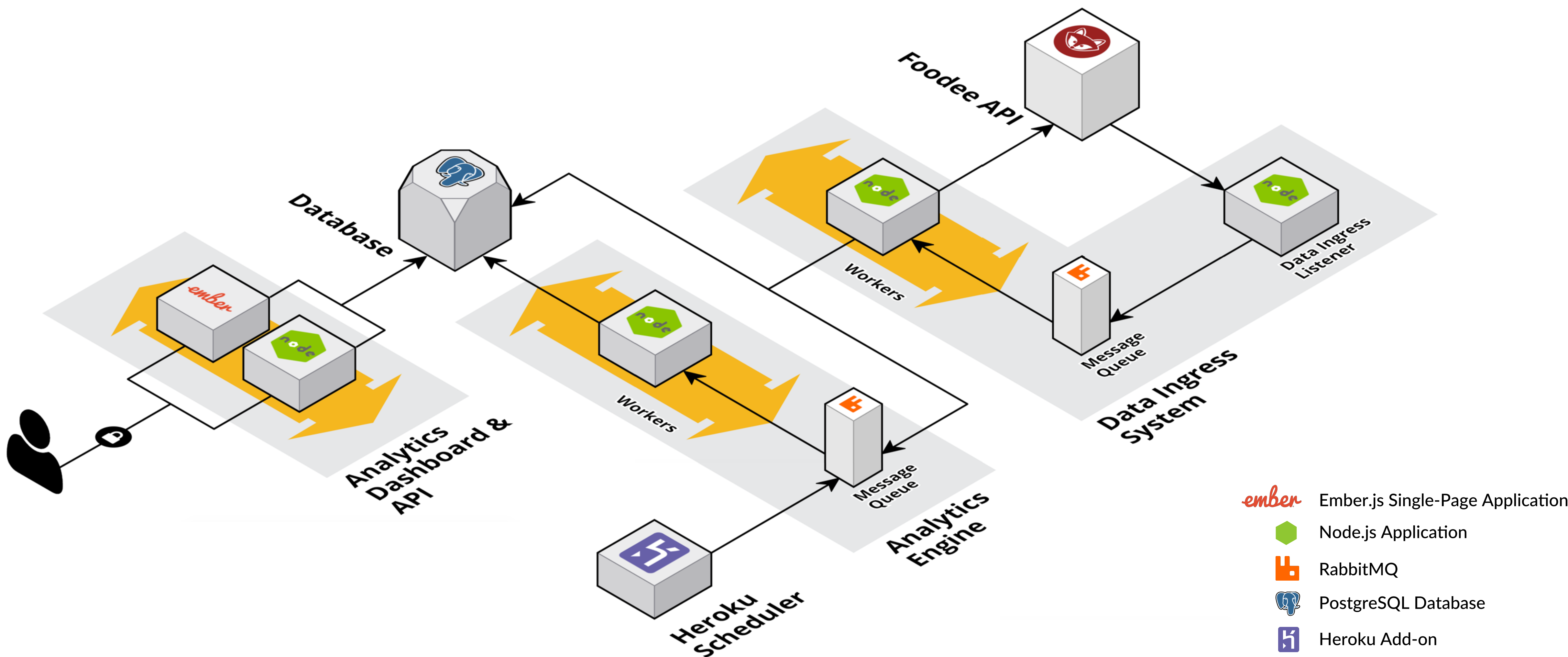
## Objectives

Provide Foodee's partners with relevant information in the form of a web-based dashboard. This Restaurant Analytics System will gather raw data from Foodee's existing systems, and generate meaningful metrics for Restaurant Partners.

Increase partner satisfaction by showing restaurant partners the various metrics that are pertinent to their business, and allow them to adjust their menus based on the data. Foodee will also be able to view which restaurant partners are providing them with the greatest revenue, and focus their efforts on higher performing restaurants.

## Our Solution

### System Architecture



#### Analytics Dashboard

The Analytics Dashboard is a single-page web application responsible for fetching data from the API and converting it into meaningful visualizations.

#### API Tier

The API is responsible for processing relevant data from the persistence layer and exposing it in JSON-API format consumable by client-side applications.

#### Data Tier

PostgreSQL database; persistence layer for storing raw data from Foodee API, restaurant metadata, job states & metrics computed by the analytics engine.

#### Data Ingress System

Comprised of the *Ingress Job Queue* & *Data Ingress Workers*, responsible for populating the database with data ingested from the Foodee API. Workers will consume messages from the queue and request the raw data for the order defined in the message from the Foodee API.

#### Analytics Engine

Comprised of the *Analytics Job Queue* & *Analytics Workers*, the Analytics Engine is responsible for computing restaurant analytics based on the data obtained by the Ingress System. Workers will consume messages from the queue, generate the report or metric specified in the job definition, and store the report in the database.

#### Heroku Scheduler

The Heroku Scheduler allows for Analytics jobs to be scheduled on a regular basis. This allows the Restaurant Analytics to provide weekly, monthly, and annual reports.

## Analytics Dashboard

The Restaurant Analytics Dashboard allows Foodee's restaurant partners to manage and monitor various aspects of their historical and incoming Foodee orders. It is responsible for converting data into meaningful visualizations in the form of graphs and charts to provide users with useful insights of their restaurant operations.

Depending on the report, users may be able to interact with metrics displayed, such as configuring the time frame in a time-series analysis and selecting specific restaurants to view metrics on. Users are also able to export reports for specific metrics in PDF format.

