

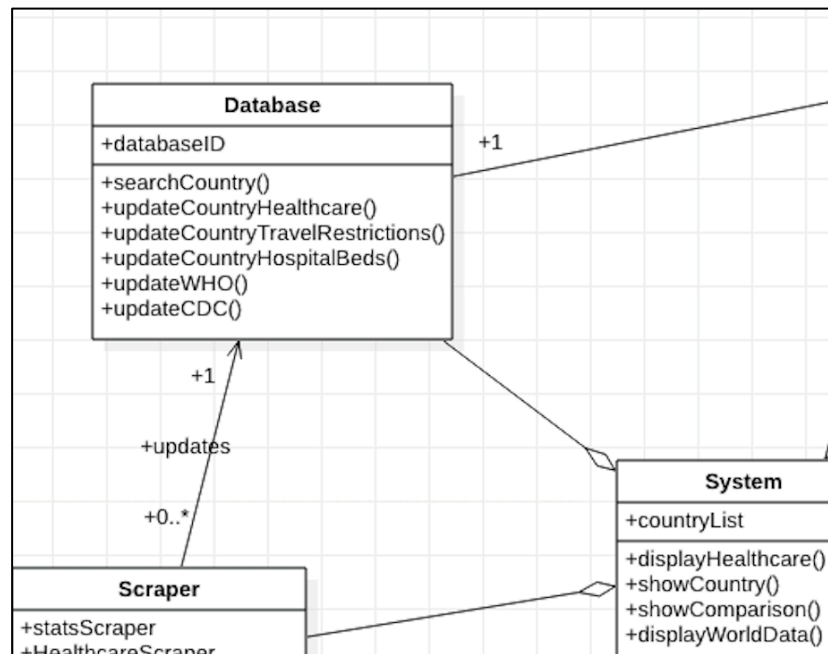
PandemicTracker™

Design Patterns Report

This document outlines the design patterns that are implemented in the PandemicTracker software. These templates make our software robust and guide our assignment of responsibilities to the various classes used in its structure.

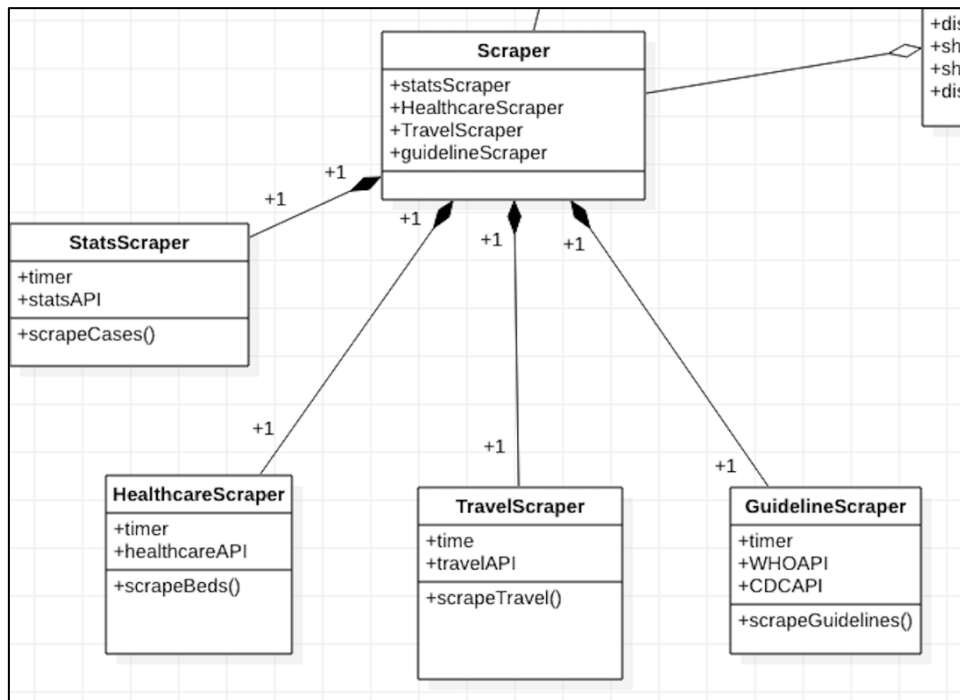
1. Façade

The Façade design pattern provides the client with a simplified interface to use on top of more complex frameworks and subclasses. Only the functionalities that the client requires are provided by the façade. The “Database” class is not the database in itself, but rather represents the AWS database being used by the system. The limited functionalities needed by the system are provided by this class – searching for a country, updating travel restrictions, updating healthcare information, etc. AWS provides a host of functionalities with its EC2 database, but PandemicTracker only requires a small set of functionalities.



2. Adapter

The Adapter design pattern describes a class that inherits behavior from both a client and a service, allowing the two to work together. Although the “Scraper” class does not specifically work in this way, it does adapt the functionalities of the various scraper classes it contains so that they can be compatible with the “System” class. The scraper classes (StatsScraper, HealthcareScraper, TravelScraper and GuidelineScraper) accumulate raw data from their APIs, and this cannot be given straight to the System class. Not only would this be overcoupling, it would also be incompatible with the System class’ functionalities. Therefore, the Scraper class inherits functionalities and adapts the information from the various scrapers to be used by the System class.



These two are the only clear design patterns incorporated into the PandemicTracker. The requirements of the software did not dictate a need for more complex design patterns. One could say that the “CountryList” class shows elements of the Factory design pattern, but it is not used to make different kinds of subclasses, it only creates different countries.