DESIGN PATTERNS USED

1. Façade

Motivation: To provide a simplified interface for the Restful Web Api.

1. Observer-Observable

Motivation: When the database records change, this change should be reflected in the searbox.io index.

1. Strategy

Motivation: For now we are using Twilio to send sms messages as a means of notification. In the future, if we have to add a notification mechanism like email, the application should be easily extendible.

1. Data Access Object Pattern

Motivation: The application has to be loosely coupled with the database so that it is easy to change the underlying database without modifying the existing application code.

1. Singleton

Motivation: The classes are declared singleton wherever necessary. This will not be needed if we are using a web framework like spring where we can define beans that are singleton by default.

1. Factory

Motivation: Here public static methods are used as factory methods. It helps in decoupling the object creation from the business logic of the application. Hence, the code looks much cleaner and is easier to maintain.

Note: UML class diagram is attached for reference.