**MVC Diagram Representation Explanation:**

Our team followed an MVC design pattern to develop our application. An MVC framework has three main components: Model, View, and Controller. The model layer is responsible for the data and logic. The controller layer is responsible for user input process and the view layer is responsible for the user interface.

The core of our model layer is our database design. The initial 150GB metadata we had took about 15 minutes for a single field query. We optimized query performance by doing the following: indexing on all searchable fields, normalizing by reorganizing tables, cached the most frequently visited data and created auxiliary tables of pre-computed statistics for quick retrieval. This resulted in being able to decrees our query time from 15 minutes to a few seconds.

The other part of our model layer is the constructor of DAOs. JavaBean DAOs were used to retrieve data from our database. The DAOs consisted of two layers: the repository and service layer. The repository layer consists of database logic and ensured CRUD (create, read, update, and delete) operations. The service layer consists of all the business logic in our application. We use the repository layer in order to implement methods that fulfill business needs.

The model layer modified the controller layer. The controller layer consists of actions. We’ve divided the actions into Tiversa actions (admin) and customer actions. Tiversa actions consist of seven things: Top “X” of various fields, admin details, single and multi-field searches, list files of one infection, generation of offender list, their details, and finding similar offenders. The customer’s actions include a similar Top “X” of various fields and a notification system. We also used Spring, Hibernate and Structs for development of the model and controller layers to ensure our application meets industry standards.

The model updates the view while the controller modifies the view. The view consists of dashboards and we used modern technologies such as Bootstrap, HTML, CSS, JavaScript and its libraries to build a responsive and dynamic interface.

All of the above help describe the MVC diagram that is attached in this documentation.