

## COMP0004 Coursework 3

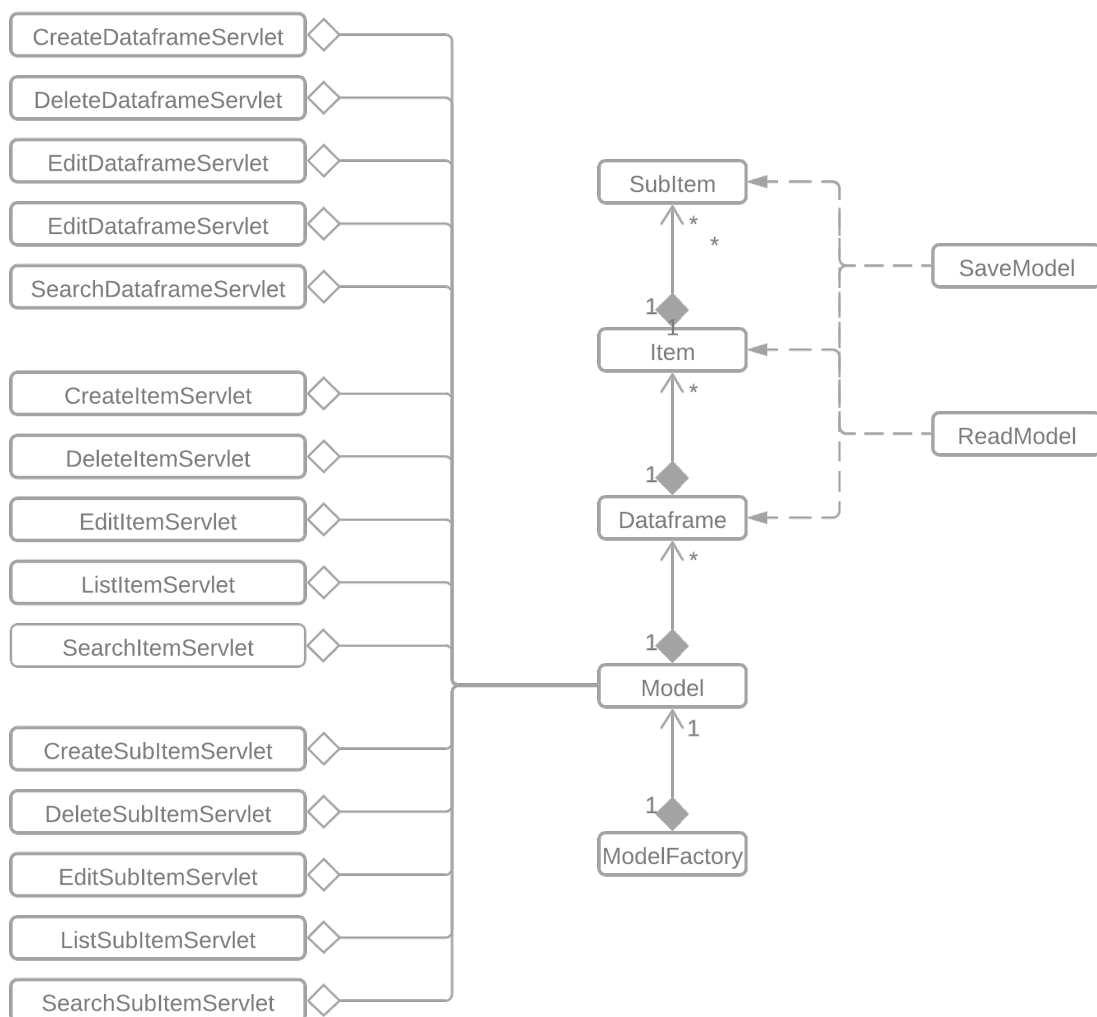
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### Section 1:

An item storage web application was implemented with a simple front-end. The user can create, edit, view, and delete items and assign these items to different lists. Items and lists of items can also be assigned to various lists. Users can also search for items and lists by their label globally and locate them. The application is capable of loading data to the data model from CSVs, and it also automatically saves all the lists and their items when they are being written.

### Section 2:



### Section 3:

The main idea while designing the classes was to separate functionalities to is related data classes. All the different data classes (Dataframe, Item, Subitem) received their own servlets, and the servlets were broken down to core functionalities such as create, delete, edit, list and search. The classes have a well-focused purpose and for the data classes polymorphism was also used to simplify maintenance. Encapsulation is utilized for all the attributes of the data classes by making them private and only accessible via the designated public functions. The existing design can be improved by utilizing more core classes and inheritance, to contain common functionalities of the data classes. Also, more utility classes could be created to simplify servlet classes and reduce code duplication.

#### Limitations:

IDs are used as the key for all the function such as add, edit, update, delete therefore it visible on the front-end which might not be intuitive for the users as normally object labels would be used, and the IDs would be hidden. No session handler was implemented and the data saving functions are not well optimized, leading to excessive data write amount per data object update. The data type attribute could have been used to support proper data element visualization in the subitems. For instance, if a URL type string were added to the item storage, the string should act as a link in the subitem listing, or if the subitem type would be an image and image should be rendered on the webpage - also this would mean a proper database should be implemented behind the web application to store such data types.