Progress Report

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Change of plan

After further discussion, the main look of our UI has been modified. There will be two possible views of Item Genie: the Main Table View (Fig 1) and the Star Graph View (Fig 2):
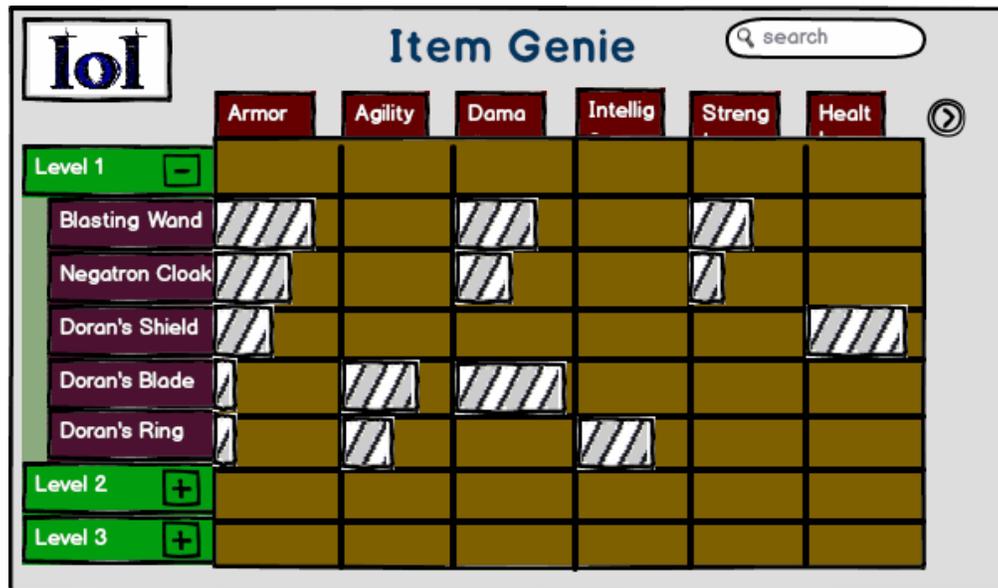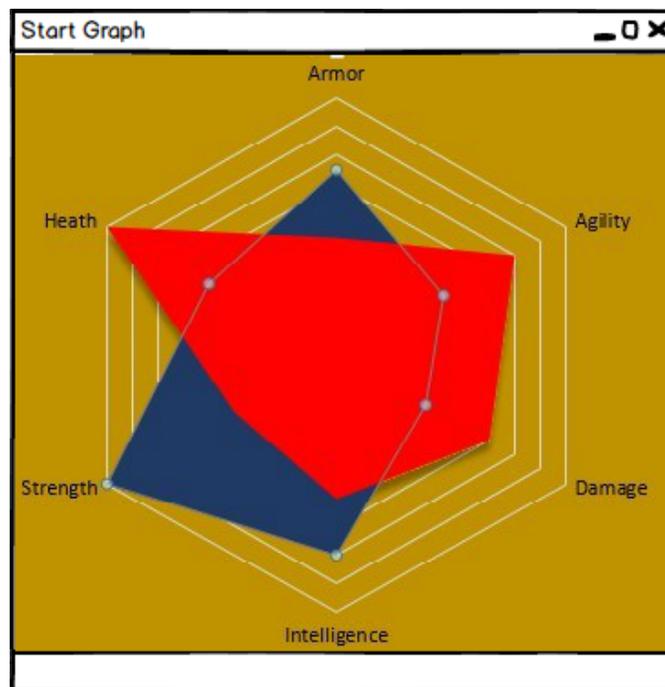

Fig 1: Main Table View

Fig 2: Star Graph View

The Main Table View allows comparisons between a greater number of items and attributes through filtering. Bar graphs will be shown in the table for easier comparison. Initially, all attributes and items will be shown. The user will then select attributes by clicking; these attributes will be moved to the front, and items with bonuses in those attributes will be moved to the front as well. After these explicitly selected attributes, the attributes which follow will be prioritised by whether the items which have those attribute bonuses have these other attribute bonuses as well. To illustrate, I can select the attributes "Damage" and "Life Steal"; these attributes, as well as items such as "Bloodthirster" and "Infinity Edge", will be moved to the front. After these attributes, "Critical chance" will be moved to the front as well because "Infinity Edge" endows a bonus in that attribute as well.

Star Graph View can be toggled as an alternate view. Star Graph View allows for better visual comparison between multiple attributes, but limits the number of attributes and items to compare so as not to compromise on the clarity of comparison. For example, an item with better attribute statistics will have a bigger "star graph" or polygon than another with inferior attribute statistics.

Current status

The software architecture has been planned out, with sequence diagrams drawn to illustrate example operations. Coding is now set to begin.

Software Architecture
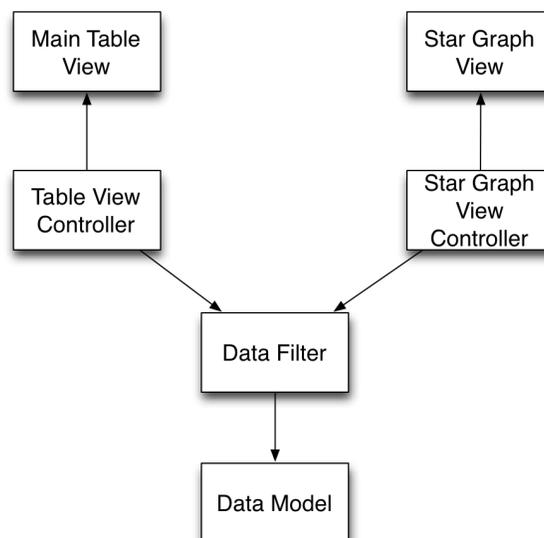
The view is decoupled from the model in our architecture. One of two views will be shown at any time: the Table View or the Star Graph View, which are respectively controlled by Table View Controller and Star Graph View Controller. Table View will handle the displaying of view (a) from Fig 1, while Star Graph View will display view (b) from Fig 2. All the game statistics will be stored in Data Model, while Data Filter will be in charge of extracting relevant data from Data Model.

Upon receiving user input, the controller will update Data Filter, which will pull the required information from Data Model and return it to the relevant controller. The controller will pass this data along to the view, which will update accordingly.

Sequence Diagram

(a) In Main Table View, when user updates selection criteria:
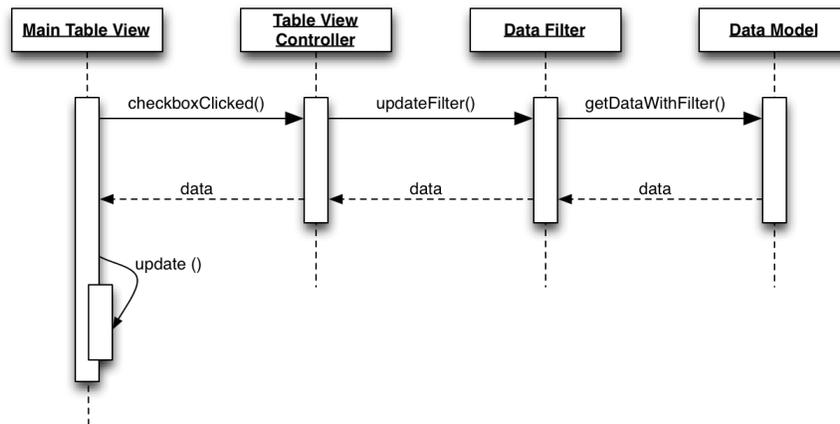
The listener attached to TableView will call upon checkboxClicked() in TableViewController. TableViewController will then call updateFilter() of DataFilter, which will then get the relevant data with getDataWithFilter() from DataModel. The data will then be passed all the way back to the view, which will call update() and display the new data.

(b) In TableView, when user desires to switch to StarGraphView:
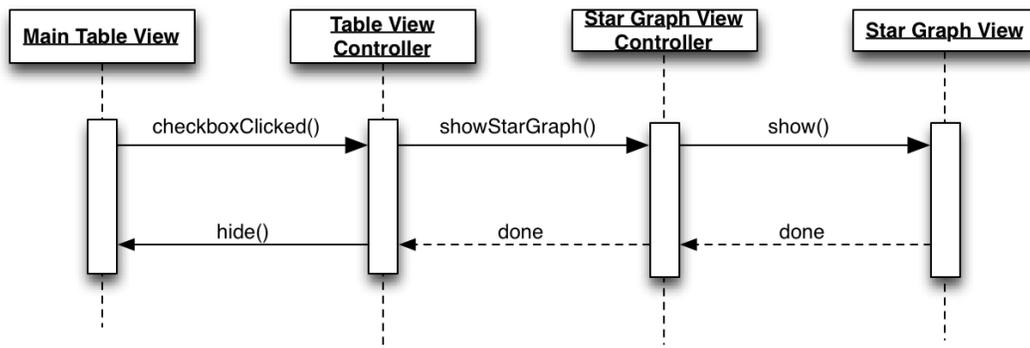
checkBoxClicked() of TableViewController will be called, which will call upon
StarGraphViewController's showStarGraph(). StarGraphViewController will then display
StarGraphView by calling show(), and the result of these operations is passed back to
TableViewController() which will then call hide() on MainTableView.

Difficulties encountered

Designing the UI proved to be as difficult as we thought it would. The preliminary drawings were
discarded as we thought they did not provide as clear a comparison as we desired. Many
questions surfaced in the process of designing, including:
1. Given the numerically vast range of bonuses different items could provide in a single
   attribute, how can we compare between, say, a Tier 1 and a Tier 3 item while not
   sacrificing the comparison between two Tier 1 items?
2. How do we display the comparison of multiple attribute bonuses between multiple items?
3. How do we, on the same page, show the possible items that this item can build towards,
   as well as the items required to build this item?

Approach to resolve difficulties

We merged the graphical and numerical comparisons into a single table to provide a visual
comparison with a single view, and provided an alternate way of comparison, the Star Graph, in
order to compare graphically several attributes of several items at once. We also decided to limit
the comparison of bonuses within an attribute to intra-tier only (ie, items of different tiers cannot
be compared side by side, as there is no need for that-- a tier 3 item is obviously better than a
tier 1 item). Besides these, we are also utilising different types of events such as hovering and
right clicking for menu to display extra information about the item so as not to clutter the screen.
These dialog windows which will overlay the current screen will link those items to be selected
easily for comparison.