S2: Design of a new View: Combat View

**Behavior Description:**

A combat view is a “local health view” in that it displays the health values of all agents that would appear in a corresponding local map. The view is “centered” on a Sim\_object’s location. If the object is an agent and the agent moves around, the list of health values will also change accordingly given that other agents might appear/disappear from the local view centered on that object. If the object is a structure, the combat view will be “centered” on a fixed location, but since other agents might enter/exit the local view of that structure, the list of health values might also change accordingly. Note that the combat view only lists health values of **agents**. The view will not show any information about any structures since structures don’t have health values, even if the view is centered on a structure. Similar to a local view, the user cannot change the “size” or “scale” of a combat view – it has the same fixed size and scale of the local view and its “origin” is adjusted to correspond to the location of the designated object.

The view can be opened for any existing Sim\_object, and can be closed at any time once it is open. If the designated agent (i.e., the agent on whom the view is “centered”) is gone, the view remains centered at that agent’s last location until the user closes it. If the view is still open after the agent is removed and a new object of the same name is created, the view will be automatically centered on the newly created object.

Similar to a health view, a combat view will display all information in a list format, and in lexicographic order by agents’ names. All health values are shown with two places to the right of the decimal point.

Since combat views and local views are of the same size and are both centered on an object, users can open a pair of local view and combat view for the same object to know both the locations and health values of nearby agents. This could be especially useful when there is a fight in the vicinity, as the user can monitor how each agent’s health value changes.

**How to use it:**

Since both local view and combat view are represented by the name of the object that the view is centered on, the **open** and **close** commands are modified so that the user (and the system) can distinguish these two views. The new command formats are:

* **open <view type>** for map, health and amounts views. And **open <view type> <view name>** for local and combat views. For example, if a user wants to open the map view, s/he would type **open map**. If a user wants to open a local view and a combat view for Bug, then s/he would type **open local Bug** and **open combat Bug**, respectively. An Error exception will be thrown and the user will be warned if view type is not one of map, health, amounts, local or combat. It will also be thrown if the view type is either local or combat, but there is no existing object of the specified name.
* **close <view type>** for map, health and amounts views. And **close <view type> <view name>** for local and combat views. For example, if a user wants to close the map view, s/he would type **close map**. If a user wants to close a local view and a combat view for Bug, then s/he would type **close local Bug** and **close combat Bug**, respectively. An Error exception will be thrown and the user will be warned if view type is not one of map, health, amounts, local or combat. It will also be thrown if the view type is either local or combat, but there is no existing object of the specified name.

If the view type specified in the “open/close” command is map, health, or amounts and followed by extra words, then the extra words such as “open map Bug”, the word “Bug” will be treated as start of the next command.

All other commands for views remain the same as in Project 5. The **show** command will make all views draw themselves in the order that they were opened, including combat views. **default**, **size**, **zoom** and **pan** still only apply to the map view and has the same effects as in Project 5.