M2: Group Description

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A group is a collection of ships and other groups that allows a user to order that that collection's ships to perform an action using a single command. A ship group can be used in place of a ship in all commands in the simulation save for two:

- You cannot attack a group, as a group is a collection of Ships that are unrelated by location. It would not make sense for a Torpedo_boat to attack a group of 100 ships all across the ocean at one time.
- You cannot create a Bridge view of a group of ships. A group does not have a set position or heading, so it would not make sense to allow a user to create a bridge view of a group.

A "group" is a collection of ships and other groups. Members of a group are called "children" of that group. A ship or group can be a member of a single group only, and if they are the member of a group, that group is said to be the "parent" of the ship/ship group. Therefore, a ship or group can only have a single parent.

Cycles are not legal in our simulation. A "cycle" is the case where two groups are members of each other. If a user attempts to make group A1 a member of group A2, and group A2 is a member of group A1, the simulation will print an error message. If adding a group to a group would cause a cycle to occur, the simulation will print out an error message and not perform the action.

If a ship sinks while it is a member of a group, it will remove itself from the group during the sinking process.

Group Commands
"create_group <group_name>": Creates a new group and adds it to the simulation.

"remove_group <group_name>": Removes a group named <group_name> from the simulation. Children will be removed from the group and the group will be removed from its parent group if necessary.

"add_to_group <group_name> <component_name>": Add a group or ship named <object_name> to a group named <group_name>.

"remove_from_group <group_name> <component_name>": Remove a member named <object_name> from <group_name>.