Refactoring Changes

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1 Decompose Conditionals

- At arena.cc : 28 added params to the member initalization list.

- At arena.cc : 35 set params to the params reference passed in by the controller as part of the arena constructor.

- At arena.h : 21 added the arena params header file to the includes.

- At arena.h : 173-175 added a getter and setter for the params of the arena.

- At arena.h : 186-189 added a member variable so the arena stores its paramaters so that they can be easily retrieved later.

- At arena_params.h : 32-46 overrode the equivalent and not equivalent operators for params so that two params could be compared directly.

- At controller.cc : 42-56: removed the old conditional and rewrote the conditional so that the new params were compared directly against the old params and the arena would only be deleted and replaced with a new arena if the values changed.

This particular conditional was large and clunky and, because one could not compare params directly against other params, would have to be used as the conditional any time in the code one wanted to perform a similar operation. By overriding the operators in the arena params header, the code is made more open to extension.

2 Collapse Hierarchy

- At arena.cc : 31-32 removed the light vector and food vector from the arena member initialization list

- At arena.cc : 58-61 removed the old way by which the sensor vector in arena was populated by calling all of the individual sensors from each robot as they are made.

- At arena.cc : 73-75 removed the code for pushing all of the lights and food into their respective vectors as they are added to the arena.

- At arena.cc : 116-120 removed the old loop for updating the sensors with info with a simplified double for loop that passes all entities in the arena to every sensor of every robot in the arena.

- At arena.h : 76-79 removed the getters for the light and food vectros

- At arena.h 195-198 removed the light and food vectors from the member variables.

- At arena_entity.h : 132-152 added the setter and getter for intensity to the arena entity header file and added intentiy to the member variables for all members of the arena entity class.

- At entity_factory.cc : 59-74 removed the old code for initializing the sensors onto the robot.

- At food.cc : 21 (m) removed captured from the member initialization list for food since it is no longer relevant at this stage in development.

- At food.h : 69-84 removed the setter and getter for intensity from the food header file and removed the intensity and captured variables from the food member variables.

- Deleted food_sensor.cc

- Deleted food_sensor.h

- At light.h : 104-122 removed the setter and getter for intensity from the light header file and removed the intensity form the light member variables.

- Deleted light_sensor.h

- At robot.cc : 25 added sensor vector to the robot member initialization list

- At robot.cc : 27-34 deleted the old method for intializing the sensors for the robots and setting their poses. Added a new method based on the vector-based implementation.

- At robot.cc : 57-60 removed the old method for updating the poses of the sensors at every timestep with the new vector-based implementation.

- At robot.cc 84-146 removed the old conditional flow for dealing with passing the sensor information to the motion handler for different hunger levels with a single for loop that encapsulates all combinations of sensors and hunger levels using the new vector-based implementation.

- At robot.h : 21-22 removed food sensor and light sensor from the includes. Added sensor header file to the includes.

- At robot.h : 119-134 removed all getters and setters for the old sensor implementation.

- At robot.h : 128-129 added the new getter for the sensor vector.

- At robot.h : 147-150 removed the old sensors from the member variable list. Added the new sensor vector to the member variable list.

- Renamed light_sensor.cc to sensor.cc

- At sensor.cc : 13 replaced the old include line for the light sensor header with that for the new sensor header.

- At sensor.cc : 34-79 rewrote the methods for light sensor to use the new generalized method for receiving info from the arena.

- At sensor.h : 20 added the arena entity header file to the includes

- At sensor.h : 40 modified the constructor to consist of only the side the sensor is on and the what type of entities it receives information from.

- At sensor.h : 46-51 added the old sensor method declarations to the sensor header.

- At sensor.h : 99-105 added the setter and getter for the receiver type and added the receiver type to the member variables.

By collapsing the sensor hierarchy I made the code more open to extension since any new sensors added will not require the creation of a new header and source file. This decision was made because the code in the source and header files for the two types of sensors wound up being nearly identical so having them as subclasses was unnecessary. The new sensors, all being of the same type, could then easily be stored in a vector in the robot which greatly cut down on the length of the code in the robot source file and maade it so that if additional sensors were to be added, far less redundant code would be needed to be added. The intensity was moved into the arena entity header because the code for intensity in the food and light header files was redundant and by making intensity a common trait to all entities in the arena, the code it made more open to extension since sensors can be made which receive information about any type of entity without the need to add code to that entity's header file.