**TAU-Robot Exercise 1 - Design Document**

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Scope of this document: Explanation of components used in implementation and design rational.

* For further explanation see class and sequence diagrams.

**Introduction**

**House**

**OneSimulation**

*Inner class of Simulator*

*Used by:* Simulator

*Uses:* House, Abstract Algorithm, Sensor

* Represents a single simulation of a single abstract algorithm running on a single house.
* Responsible for updating house state when abstract algorithm makes a move.
* Checks validity of Abstract algorithms moves and updates simulation status accordingly (i.e. Abstract algorithms made an illegal move, out of battery etc.)
* Calculates single simulation score using winner information provided by Simulator

**Simulator**

*Uses:* House, OneSimulation, Naïve Algorithm, Abstract Algorithm, Sensor, Abstract Sensor

* Loads Abstract Algorithm implementations, houses and configuration information.
* For each house, runs all simulation in parallel.
* Coordinates multiple simulations by executing them step by step in round robin fashion.
* Keeps track of the winner and simulation finishing conditions (Max\_Steps).
* When simulation finishes initiates score calculation by OneSimulation’s by passing winner and global simulation information.
* Prints calculated scores.

**Naïve Algorithm**

*Simple implementation of Abstract Algorithm*

*Used by:* Simulator, OneSimulation

*Uses*: Sensor only

* Chooses next step randomly between staying or moving to any non-wall cell.

**Sensor**

**Error Handling**