Fuzzy Logic Project Description

The aim of this project is to encapsulate a fuzzy logic system, allowing a fuzzy logic system to operate in as a proper fuzzy logic system under the guise of a normal logic system with very little special treatment to make it work as intended.

Through operator overrides the fuzzy logic system could also be used with a normal logic system as a hybrid of the two.

**Threading mass AI**

If many or logic systems were implemented or extremely complex systems were created, they could also be pushed onto another thread for where that thread can process all the logic via queue and the object can retrieve the results at a later point.

The logic system will be modular so that instead of having to make specific logic systems for each application, the logic system can be pieced together where needed.

The logic system can be built as a pieced together system which can be computed and recomputed whenever required, or it can be done once where needed using operator overloading.

**Input Object**

The input object will either hold a pointer to a variable or be set each time before the logic is computed, the second input method is in case the user doesn't want to tie the logic system to a single object.

**Rule**

A Rule takes in an input object or a logic object and will return a result based on the input depending on what type of rule it is ie. Triangular, Trapezoidal, Shoulder.

Rules will have their operators overridden to allowing on the spot computation ie. result = rule1 AND rule2.

**Logic Object**

The logic object will take in two Rules and/or Logic Objects and will compute them as required in the way defined as it's type of logic ie. AND, OR, NOR, XOR.

Because the logic system can be computed on the spot, this object is optional and will be used internally by the rule for computation.

**Output Object**

The output object will take in any of the above objects and will output them from the logic system when it's computed.

**System Object**

If the logic system is setup to be computed at a set time, it will all be packaged up into a System Object, which can be requested to compute, because of how the logic system is setup, this object is optional.