OVERVIEW OF HOW THE SIMULATOR WORKS. DMW 10/18/15

When you press run, first an instance of a GridManager class is created. This can be a GridManagerWright object, GridManagerMoran, etc.

Then, the GridManager class creates the totalCount array that stores how many organisms of each type are represented

at each timestep. If the petri dish is enabled, the class also creates a matrix that stores the location of each organism.

During each generation, the following process occurs:

-- In the GridManagerAbstract class, the getNext function updates the timestep and calls the getNextGeneration function.

-- In Exponential, Logistic and Moran, the getNextGeneration function calls the reproductiveEvent function N times,

where N is the size of the population. Each of these classes implement their own reproductiveEvent function.

-- For example, in the Exponential Case, the reproductiveEvent function does the following (this code is in the GridManagerLogExpAbstract class):

    Repeat the following process until a birth event takes place:

        select a type randomly, where the weight of each type is (b+d)\*(current number of organisms in population of type)

        with probability d/(b+d) perform a death event (kill an organism of that type)

        with probability b/(b+d) perform a birth event (add an organism of that type)

-- In Wright-Fisher, the GridManagerWright class implements its own getNextGeneration function, which performs the Wright-Fisher

generation update

DETAILS OF HOW THE CONTENTS OF THIS DIRECTORY WERE ASSEMBLED FOR github REPO

DMW Sept 2, 2017

This is a merge of the 2015 PS-2 and PS-6 versions.

* Overwrote PS-2 version of with PS-6 version,
  + AutomatedSimulator.m, which does some better input parameter validation.
  + GridManagerAbstract.m, which has a bug fix on mean fitness.
  + GridManagerExp.m and GridManagerLogistic.m, which have a bug fix on ParamBounds1 and 2.
  + GUI.m, which seems to allow reseeding with previous random number seed.
  + GUIHelper.m, which I think fixes a plotting issue.
  + MutationManager.m, which I think fixes a bug around recombination.
  + ParameterManager.m, which I think fixes a bug around spatial structure.
  + testCorrectness.m, small tweak
* Copied PS-6-unique files here. These are required for the MSE problem set only.
  + MultilocusMSE.m
  + MutationCount.m
  + PoissonDist.m