Play God!

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What is it?

PlayGod is a game that allows the player to 'play god' and manipulate the environment that a group of bugs is living in. Changing the environment changes the genome of the bugs as natural selection kills off the bugs not suited for the environment. The player wins when bugs are well adapted.

Bug Evolution

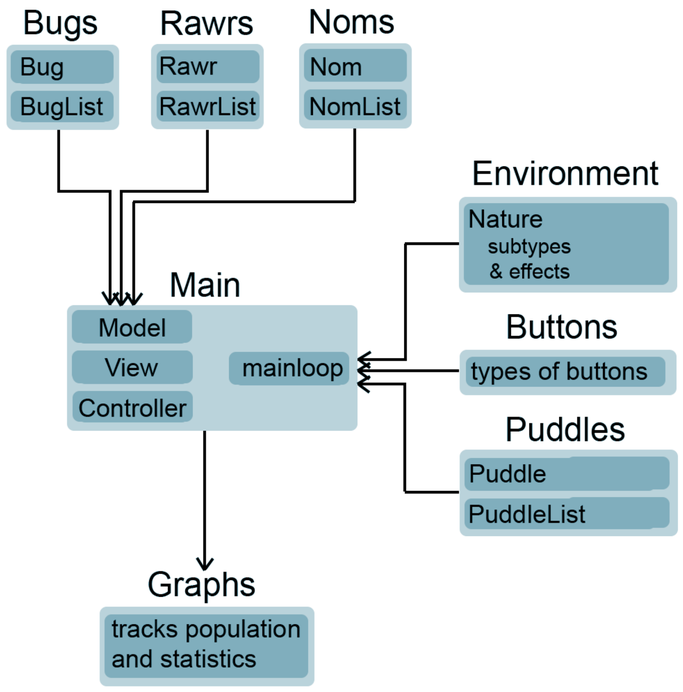
Bugs have five heritable stats: color (which affects camouflage), speed, attack/ defense, heat retention, and drought resistance. The bug has two copies of each stat, but only the higher one affects its survival. The lower stat is like a recessive gene in that it can be passed on to offspring when two bugs mate.

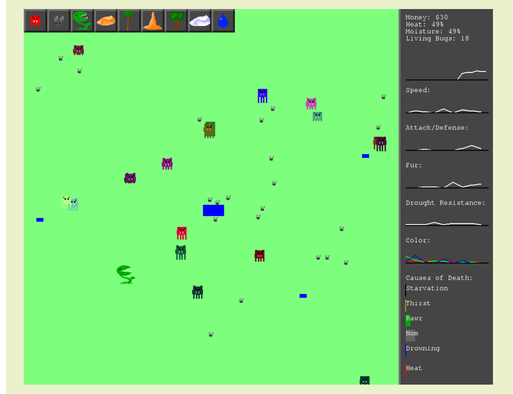
Each bug also has a chance to mutate when it is born, allowing for genetic diversity that lets the population evolve from one set of specialized adaptations to another.

Libraries

We used Pygame for everything, including the graphs, since MatPlotLib did not integrate well with the game window.

Code Architecture





Stat Checks and Probability

All in-game events except user actions are based on probability. For example, when a bug bumps into a rawr, the program checks random.random() against the difference in their attack stats. If the random number is high enough, a very weak bug could still kill a rawr to avoid being eaten.

How to use the code

The Play God repo is very easy to use: just pull the code, make sure all the files are in the right folders, and run main.py from the command line (so that if it freezes you can close it easily). Earn money by breeding bugs and use it to buy more bugs or objects that alter the environment.