FlyLab.app

1. Author and Contact Info:

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2. Category: Biology (Genetics)

3. Brief Description:

FlyLab simulates the Mendelian genetics of the common fruitfly *Drosophila melanogaster*. Flies carrying various mutations are designed by the user and mated to produce offspring. Offspring can also be mated to produce later generations. Backcrosses and testcrosses are also possible. In fact, any two flies created by *FlyLab* can be mated as long as they are of the opposite sex and don't carry different mutations from the same category. The user sees a graphical representation of each fly together with a replication factor and an abbreviated phenotype description. Tools are available for seeing a magnified image of any fly, getting a textual log of the matings and offspring, and saving flies for later use during the same session.

4. How the Application Can Be Used:

FlyLab was created for an introductory college genetics course. Students must determine the genetic properties of mutations (dominant vs. recessive, autosomal vs. sex-linked, chromosome number, map distances, etc.) by designing and mating flies. The program does not provide any direct information on the genetic properties of

mutations or the genotypes of flies. These must be determined "experimentally."

5. Developed under NeXTSTEP 2.1

6. Detailed Instructions:

Flies are designed by selecting mutations using radio buttons. Flies are mated by dragging and dropping flies into the "Mating Window." Detailed instructions can be found by selecting "Help" from the Info submenu.

7. Comments:

The help panel can be customized by opening FlyLab.app as a folder and editing the Help.rtf file. This is a good place to add assignments, questions, exercises, etc.

This program is in its beta version. See the Help Panel in the application for a description of known problems and some cautionary advice on disk space. Later versions of this program will be available as shareware.