The Scenario_Builder Tool
http://yardbirds.ccr.buffalo.edu/datagrid/Scenario_Builder.php

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CSE 718
January 2004
First: the ‘Scenario’
...the building block of the testing tool

scenario: a situation a data grid could be in at any given time, made up of users, directories, files, groups, and affiliated with existing resources (like yardbirds).

Each component of the scenarios is associated with attributes that either the user specifies or are randomly generated.

So, a scenario is simply a collection of certain numbers of these components and their attributes, and from these we can experiment and derive behaviors/trends of the data grid when certain circumstances arise.

All scenarios and their components and attributes are stored in tables in phpMyAdmin/datagrid, and are manipulated and graphed by the Scenario_Builder Tool.
Functions of the Scenario_Builder Tool:

• Allows users to create, delete, manipulate and view different “scenarios” for research in the data grid project.
• Serves as a graphical interface to allow users controlled access to certain phpMyAdmin tables where information about the scenarios are stored.
• Gives users the ability to create varying situations involving different numbers of elements of the data grid.
• Allows users to simulate file aging among the different scenarios by setting parameters and viewing results over time.
• Shows trends across all scenarios or within individual situations set up by the user.
Basic structure of the tool

The Scenario Generating tool

The Scenario Simulation tool

The Scenario Visualization tool
The Scenario Generator
The window for the user to manipulate scenario information stored in the phpMyAdmin tables.

- Allows the user to create, modify, or delete scenarios that currently exist.
- The user may modify existing scenarios by creating users, directories, files, or groups based on parameters entered in the graphical interface.
- Elements are generated randomly from user inputs and stored in phpMyAdmin table.
The Organization of the Generating Tool

The user enters parameters for the generation of elements of the current scenario...

...and the elements are generated and inserted into the appropriate phpMyAdmin table.
The Scenario Simulator
The window for the user to simulate file accesses on files in stored in the phpMyAdmin tables.

• Allows the user simulate file aging over time in a specific scenario.
• The user may choose an existing scenario to age and enter parameters to specify the probability of access on files of different permissions.
• File access dates in the phpMyAdmin tables are updated and the new age of each file is stored.
The Organization of the Simulating Tool

The user enters parameters for the simulation of file access in the chosen scenario…

…and the files are aged and file access times and ages are updated in the phpMyAdmin tables that apply.
The Scenario Visualizer
The window for the user to view scenario information stored in the phpMyAdmin tables.

- Allows users to view information about the scenarios that have been created.
- The user must choose an element to view (users, directories, files, groups, or all), a scope (all scenarios together or one scenario specifically), and the name of the graph to view.
- Interactive graphs are generated for the parameters entered - more information is shown when the mouse enters a graph region and a list of pertinent entries in the phpMyAdmin tables is displayed when regions are clicked.
The user enters parameters for the visualization of elements in the existing scenarios...

...and a graph is generated where the user is able to click the different regions to get a list of entries from the phpMyAdmin tables that apply.
…and now a demonstration…