Programming Assignment 3

Operating Systems 001

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**Introduction**

Design/Implementation:

This program designs and implements 3 different types of page replacement algorithms,

with those being first-in/first-out (fifo), least recently used (lru), and optimal (opt).

The main goal of this assignment was to capture the number of page faults within

a random number of available frames between 1 to 30. My project is broken down into

numerous files named “program3\_peh39.cpp”, “graphlog.py”, and “plotlog.csv”.

For the main coding of this assignment, I chose to use the C++ language, because I felt

more comfortable with my knowledge of implementing multiple functions to perform

a task. For the graphing code, I chose to use the Python language because over the

years I’ve found that using the Matplotlib library with a log csv file is both quick and

efficient.

**Compile:**

Instructions to compile:

**To compile the Page Replacement Algorithms Code:**

g++ -std=c++11 program3\_peh39.cpp -o program3\_peh39

**To run the Page Replacement Algorithms Code:**

./program3\_peh39

The program will display the page reference string, the number of available frames,

and the total number of page faults for each algorithm.

Each algorithm writes the data collected to a log file in CSV format so that

it can be used to graph.

**Final Results:**

Graph:

The graph result shows a multi-line plot containing the 3 different page replacement

algorithms as each line.

Chart, line chart

Description automatically generated