

Program Listing



PageReplacementDriver.java

Driver program for testing the FIFO and Optimal algorithms with 1-8 frame size.



PageGenerator.java

Static class with static function for returning a page reference string of some length.



ReplacementAlgorithm.java

Abstract parent class of any replacement algorithm containing the data members.



Optimal.java

Object for computing the optimal page replacement algorithm.



FIFO.java

Object for computing the FIFO page replacement algorithm.

Results

```
PS C:\Users\smika\Desktop\310-Homework5> & 'c:\Users\smika\.vscode\extensions\vscjava.vscode-java-debug-0.29.0\scripts\launcher.bat' 'C:\Program Files\Java\jdk-15.0.1\bin\java.exe' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-Dfile.encoding=UTF-8' '-cp' 'C:\Users\smika\AppData\Roaming\Code\User\workspaceStorage\b5339b6c5a2a265096779b0173e227c0\redhat.java\jdt_ws\310-Homework5_5a60a34e\bin' 'PageReplacementDriver'
```

Page Frame Sizes to be Tested:

1 2 3 4 5 6 7 8

Running FIFO and Optimal with a frame size of 1.

Fault Count w/ FIFO Page Replacement: 9030

Fault Count w/ Optimal Page Replacement: 9030

Running FIFO and Optimal with a frame size of 2.

Fault Count w/ FIFO Page Replacement: 7993

Fault Count w/ Optimal Page Replacement: 6425

Running FIFO and Optimal with a frame size of 3.

Fault Count w/ FIFO Page Replacement: 7025

Fault Count w/ Optimal Page Replacement: 4836

Running FIFO and Optimal with a frame size of 4.

Fault Count w/ FIFO Page Replacement: 6034

Fault Count w/ Optimal Page Replacement: 3669

Running FIFO and Optimal with a frame size of 5.

Fault Count w/ FIFO Page Replacement: 5017

Fault Count w/ Optimal Page Replacement: 2741

Running FIFO and Optimal with a frame size of 6.

Fault Count w/ FIFO Page Replacement: 4026

Fault Count w/ Optimal Page Replacement: 1970

Running FIFO and Optimal with a frame size of 7.

Fault Count w/ FIFO Page Replacement: 2972

Fault Count w/ Optimal Page Replacement: 1323

Running FIFO and Optimal with a frame size of 8.

Fault Count w/ FIFO Page Replacement: 2025

Fault Count w/ Optimal Page Replacement: 786

Graph

