

Republic of the Philippines Tarlac State University COLLEGE OF COMPUTER STUDIES

Tarlac City, Tarlac Tel. No. (045) 6068173



A case study In partial fulfillment of the requirements for the course Operating Systems

Implementation of the Page Replacement Algorithms (FIFO, LRU and Optimal Algorithm)

Operating Systems Case Study

Submitted by:

Arboleda, Aron Rez D.

BSCS-3B

Submitted to: Ma'am Jo Anne G. Cura

Submission Date: May 2025





COLLEGE OF COMPUTER STUDIES

Tarlac City, Tarlac

Tel. No. (045) 6068173

Table of Contents

Table of Contents	1
I. DOCUMENTATION	2
1. First Sample Input	
2. Second Sample Input	
3 Third Sample Input	_



COLLEGE OF COMPUTER STUDIES



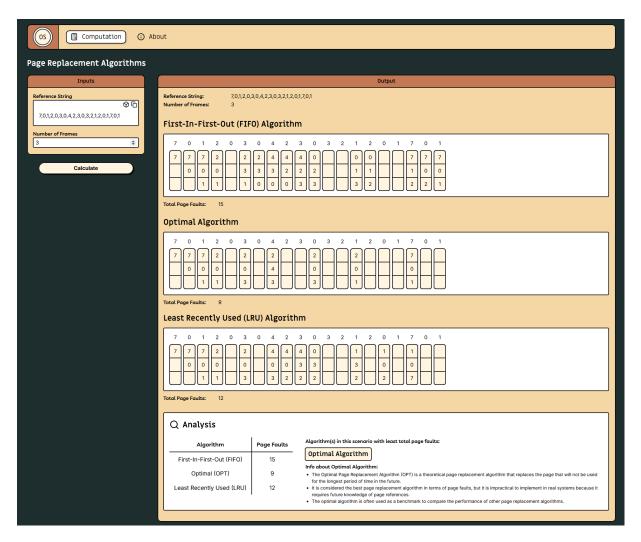
Tarlac City, Tarlac Tel. No. (045) 6068173

I. DOCUMENTATION

1. First Sample Input

Reference String: 7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1

Number of Page Frames: 3



Algorithm	Page Faults
First-In-First-Out (FIFO)	15
Optimal (OPT)	9
Least Recently Used (LRU)	12

Table 1: First Input Results

In this scenario, the Optimal Algorithm had the least page faults. The Least Recently Used (LRU) Algorithm had slightly more page faults, while the First-In-First-Out (FIFO) Algorithm ended up with the most page faults overall.



COLLEGE OF COMPUTER STUDIES

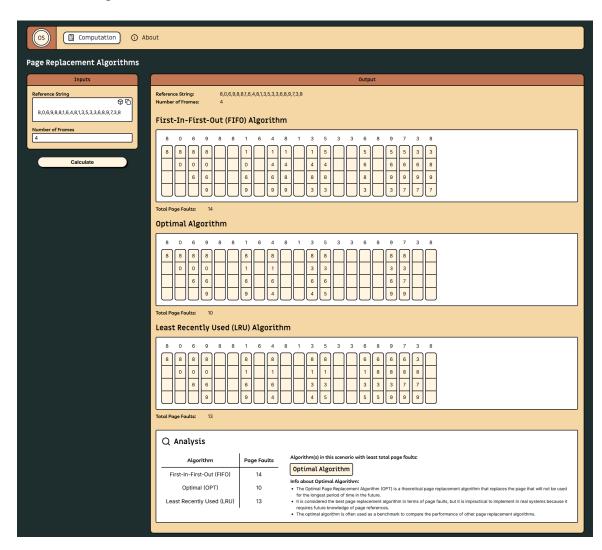


Tarlac City, Tarlac Tel. No. (045) 6068173

2. Second Sample Input

Reference String: 8,0,6,9,8,8,1,6,4,8,1,3,5,3,3,6,8,9,7,3,8

Number of Page Frames: 4



Algorithm	Page Faults
First-In-First-Out (FIFO)	14
Optimal (OPT)	10
Least Recently Used (LRU)	13

Table 2: Second Input Results

In this scenario, the Optimal Algorithm had the least page faults again. The Least Recently Used (LRU) Algorithm comes in second, and the First-In-First-Out (FIFO) Algorithm had the largest total of page faults.



COLLEGE OF COMPUTER STUDIES

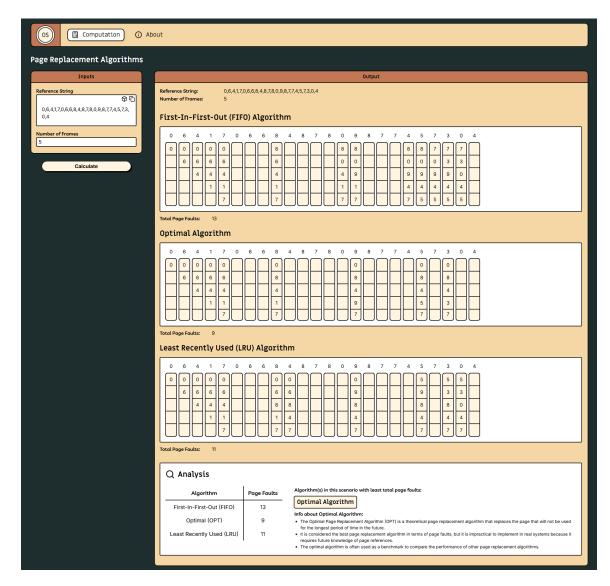
The orate university

Tarlac City, Tarlac Tel. No. (045) 6068173

3. Third Sample Input

Reference String: 0,6,4,1,7,0,6,6,8,4,8,7,8,0,9,8,7,7,4,5,7,3,0,4

Number of Page Frames: 5



Algorithm	Page Faults
First-In-First-Out (FIFO)	13
Optimal (OPT)	9
Least Recently Used (LRU)	11

Table 3: Third Input Results

In the third scenario, the Optimal Algorithm wins with the least number of page faults (9). The Least Recently Used (LRU) Algorithm comes next with 11 total page faults, and the First-In-First-Out (FIFO) Algorithm comes in last with 13 total page faults.