

Subject: Laboratory Prautices-1

Assignment No: 03

Date: 21-Sept-2021

	some redsom of the
AL NA	Title: Page Replacement:
	The state of the s
Epicahamay !	Problem Statement Write a program to simulati
A baba	page replacement algorithm
31 11 3 3 15 1	
Industry tha	SIW & N/W requirement
	Hardware.
Monday	Monifactures: Aver Enc
1 300 m	Process: Intel core 15.82650 @ 1.60 41+2
	Ram: 8GB, ROM: 512GB SSD
	Soffware:
	operating system: windows 10 (64-bit)
- al synq	INF: loce editor: Sublime Test
	Compiler: GCC version 6.3.0.
- <u> </u>	The larger and the larger than
	Theory:
	Day D. Language
	Page Replacement:
	> A computer rystem has limited amount of memory
	Adding more memory using combination of both
	hardware & soffware to allow the computer to
	address more memory than physically present.
	This extra memory is called virtual memory
	This extra memory is called virtual memory  3) Vietual memory can be implemented using two
	methods:
	i> Paging
	n) segmentation.
	of Paging is a process of reading data from & weiting



PIG1, PUNE	
	data to, secondary storage
	The main objective of paging is to divide each
	process in form of pages of fixed size.
	pages of a process are only brought from secondary
	memory to main memory when they goe needed
	5) When an executing process refers to a page, 8 it is
	first searched in moun memory of it is not present
	there, page fault occurs:
	In such case, as bring the page from secondary
	memory into main memory, this may cause some
	pages in main memory to be replaced. by
	for optimal stratergies page replacement
	algorithms are used.
	e) Page replacement Algorithm decide which page to
	remove, when new page is added
	Page replacement occurs when requested page is
	not present in main memory & civailable space is
	not sufficient for allocation of requested page
	Day Dayland and I Marsilland
11-21-12	Page Replacement Algorithms:
	A) first in first Out (ftfo)
	i) In this algorithm, the as mountains a queue
	that keep track of all pages in memory, with oldest page at front & must recent at
Least wa	back back
	11) when there is need for page replacement, it
	swap out the front page of queue
	wallalian of the state of the s
DESAMINATION OF THE	de lancorio a morres of readier and from



PICI, PONE													
Maria	B) least 18.	ecently Used (LRU)	A laming.										
<u> </u>	i> This	algorithm keeps track	of page usage over a										
	sha	et period of time	LANCE DE L'ANDRE L'AND										
	117 In	Lev. whenever a page	replanement happen,										
	the	" poins which has no	t been used for										
	lor	egest amount of time	Is replaced.										
	e7 Optimal	Page Replacement											
-	ix In this algorithm, pages are replaced which would not be used for the longest duration of time in the future.  17 Its requires process sequence details in advance.  Comp Advantages & disadvantages.												
	Algorithm	Advantages	Disadvantages										
	O O	9											
		y simple & easy to	12 Poor performance										
	1) FIFO	inplement.	in Suffers from Belady's										
		11x low ever head	Anomaly (i.e. more										
		the same particular	page faults when we										
		And the second of the second o	increase number of page										
			frames)										
	1.10	» » PC/cloud	A Loudon to Land										
	MIRU	y Efficient y Doesn't suffer from	1) Complex implementation										
		Belady's Anomaly	117 Expensive										
		- Huys money	Support.										
THE RESERVE AS A SECOND	THE RESERVE OF THE PARTY OF THE	THE RESIDENCE OF THE PARTY OF T											



PIC	T, PUNE													
		Optimal	> Easy to implement	1> Requires future knowledge										
	1310	Page	1) Simple data structures	of the program.										
		Replacement	III) Highly efficient.	ly Time consuming										
	The Contract of the Contract o	Atalanani												
		ball No.	AS TON BAN PRINCE	EMS PAR SMS										
		Algorithm/	How chart:	The second second										
		FIFO:  > start traversing the pages.  > If set holds less pages than capacity												
	ack =													
	Pasidos													
		arinsert page into set												
	adocus	at Harab	b) increment page f											
		11> e1se												
		it current page is present in set, do nothing.												
			else motoribone	spokered ped to										
			a) remove first pag	e from queue.										
		Spalaula	b) store current pag	e in queue										
_			gincrement page	fault										
		27 getu	in page faults.	ENEVI-										
_	Exhala:	May (1997)	In (1)	du ti chi										
_	200	LRU,	6465 A CORP. A A A	and Kil										
-	3W 03		at traversing the pages											
	4)11911-19	A JANUA - A B	y if set holds less page											
		3 20 300	azinset page into											
			by increment page	tault.										
	AT A COLUMN	77 77 77 77 7 77 7	yelk	Second in Cal in Light										
				present in set put 116										
			in front of qui	of queu & increment.										
			mae fault in	it insert werent page at										
			front of queue.	and the state of t										



	27 refurer page fauts														
	1 - 1 - 1 - 1 - 1 - 2 - 0 - 2 - 0 - 2 - 0 - 2 - 1 - 2 - 1 - 2 - 2 - 2 - 2 - 2 - 2														
	Optimal Page Replacement														
A WATE	17 Start traversing the pages														
0 4 1	If if set holds less pages than capacity														
+10	ar mest page into set														
	brincrement page fault														
	117 else														
4 2 4	if current page is present in seb. do nothing														
	else remove the page from set which will														
FEF	be used last in future. Also increment page														
000	faults & puts current page i'n set														
	zeturn page faults														
	Test cases:														
	Consider sequence of pages:														
	7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1														
	f saparity =3.														
	fifo page replaiement														
	70120304230321201701														
	77701223042203000777														
fact															
	1 P. 12 Page Paplar purport														
	1 KO rage replacement														
	0012030423030111100														



PICT, PUNE																						
	a viction range lasts																					
	7	0	1	2	0	3	0	4	2	3	08	3	2	1	2	0	1	7	0	1		
								15	L CV	ala.	A	1	10		JA 11	nd.	0			-	_	
	7	9	7	2	0	3	0	4	2	3	0	3	2	1	2	0	1	7	0	1		
		79	0	1	2	0	3	0	4	2	3	0	3	2	1	2	0	1	7	0	_	
LRU>			7	0	1	2	2	3	0	4	2	2	0	3	3	1	2	0	1	7.	_	
	1	1	1	1	int	1	124	1	1	1	1	10		1		1		1				
	Optimal Rage Replacements													_								
janland o	7	0	1	2	0	3.	0	4	2	3	0-	3	2	-1	2	-0	.)	7	0,			
the same	11	61	- VV	100	A	211	110	N. C.	9-15	DAY		1									-	
304 34-20	7		7	2	2	2	2	2	2	2	2	2	2	2	2	2	2	7	7	7	_	
2		0	0	0	0	0	0	3	4	4	3	0	0	0	0	0	0	0	0	0	_	
	1		1	1		3	3	1 1 1 1	3	15	10	)	10	1	1/7	11		1				
	1																					
												1 1	- to-	. 4	) (1)	210	3 1				_	
	Ce	npa	21.80	mi	-			DA.	10		izi Ai	0.00		col	120	(0)					_	
4.0.F.J.,C		A 1	2111	an I	To A		A	-									21.0	hil	Sort		1	
		Algorithm!							Page fauts Page maisse												T	
		fifo							15 5												1	
		LRU							12 2000 1000 1000 80 104													
10	A F	optimal page replauement							S 9 A O S O 2 1 9 1 F													
			repl	cue																		
			0 0	18	0	2 2		0	£	2	2		0	1	1	F						
0	6	end	wien	10		0 0	-	4	0	2	0			7	. 0							
		I	nt	his	as	sign	me	nt	we	Je	arn	ed	C	ube	nt	V	ari	ory	pa	ge		
		70	pla	Lem	ent	: a	190:	eith	ms.	Al	80	811	nu	lai	ed		the	m	4	,		
		de	ne	9.1	sul	t	and	dys	S.	AUD :	1) 4	91		13.13		L	1					