Ex. No.: 11a) Date: 16/4/25

FIFO PAGE REPLACEMENT

Aim:

To find out the number of page faults that occur using First-in First-out (FIFO) page replacement technique.

Algorithm:

Declare the size with respect to page length

2. Check the need of replacement from the page to memory

3. Check the need of replacement from old page to new page in memory 4. Form a queue to hold all pages

- 5. Insert the page require memory into the queue
- 6. Check for bad replacement and page fault
- Get the number of processes to be inserted
- 8. Display the values

Program Code:

a colobbath a barbara a barbara a barbara a barbara

include cathio. h> # defino MAX 100 ent main () { int page[MAX], queu [MAX]: ent o Coparty: ind froit 20, part 20, page fauth 20; intiz, food: prof Events the number of page : "); Seaf C".l.d", fa); But & Et to lefound Atray: "). for (126; i cn; i ++) & 3 Seof (" of d", & page (1)) 65 print ("Eth page from his: "): Seaf C'. I.d " & Capacity):

```
int bout 20
for Ci=oicn; itt)f
   feel = 0:
   for Cj=0;j coot ;j++ ){
     if (quano GiJ2 = pages [i]) {
      4C! food ) {
          Pog fauto +4:
          if (but c aposity) {
           quan [Cost + 1] = page [1]:
            grow [front] = page [i];
front = (front +1)/. Exposity;
        pred (". h d", pagos li) ),
       for G 20 ij cout; J +1) &
             prints ("1. d", quas [j];
      2 pert Cano);
       put (" Total log facts: " of d'n " log fout ):
      leturn 0;
```

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Sample Output:

[root@localhost student]# python fifo.py

Enter the size of reference string: 20 Enter [1]: 7 Enter [2]:0

Enter [3]:1 Enter [4]: 2

Enter [5]:0

Enter [6]: 3

Enter [7]:0

Enter [8]:4

Enter [9]:2

Enter [10]: 3

Enter [11]: 0

Enter [12]: 3

Enter [13]: 2

Enter [14]: 1

Enter [15]: 2

Enter [16]: 0

Enter [17]: 1

Enter [18]: 7

Enter [19]:0

Enter [20]: 1

Enter page frame size: 3

7->7--

0->70-

1 -> 701

2 -> 201

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0 -> No Page Fault

3->231

0 -> 230

4->430

2->420

3->423

0->023

3 -> No Page Fault

2 -> No Page Fault

1->013

2 -> 012

0 -> No Page Fault

1 -> No Page Fault

7->712

0 -> 702

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238 : 56

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41 2 5 6 8 3 5 6 4 51 - bay so for of

Input: Enter the number of page: 12 Enter the separa string : 1303 5 6 3 0 6 4 17 Enter to fram Sig : 3 Output: 3:13 0:130 3:130 5. 530 6:560 30: 563 0:063 6:063 4: 462 7:417 Total pag fautts: 9

1 > 7 0 1
Total page faults: 15.
[root@localhost student]#

Result:

Thus, number of pages faults thing FIFO page replacement algorithm.

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Ex. No.: 11b) Date:

LRU

Aim:

To write a c program to implement LRU page replacement algorithm.

Algorithm:

- 1: Start the process
- 2: Declare the size
- 3: Get the number of pages to be inserted
- 4: Get the value
- 5: Declare counter and stack
- 6: Select the least recently used page by counter value
- 7: Stack them according the selection.
- 8: Display the values
- 9: Stop the process

Program Code:

inches (stdis . h > # inclub c stales. h > # dofo MAX 100 int fid LRU (int time [], into)? inti, minum = time [0], Pozo; for (121; i cn; 147) € if (timoli) & minimum & minimum = time [1]; POS21; getun pos: 69

int on, beganity, Courts 20, fauth 20:
int i, j, pos, flor, blage:

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proof (" Eiter the number of page: "):
Scal (" . f. d" , R . ):
swiff (" Et the pages referent string: ");
  facizo; icn; 144 DE
      Scot (" old", & pays (i)))
   point (" Tate to number of froms: "):
  Scorf (" old", & Capacity);
  for Goojicapaty: +1) {
            frams (i] =-1;
   forlizo; icnsi+1){
         flog + 2 flog 2 20;
          for Cj 20; ] & aportly , j+4 &
                    if (frame []] = = pages [1]) {
                         Contrat :
                        tino []] = Canto for!
                        Alog = = flog = 1;
           if (flag = 20) &
             for (5=0; 1 Capacty 3 5 +4 )
              if [ from 2] ]= 2-){
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frames ++;
                                      is any to remove of the or in
             frames [] ] 2 poque[1];
                                       1: partir sorper at the
            tino [j] = Countri-
             floy 2 2 -1;
                                         E and for when I did
 if (flag 2 2 20) {
     POS = find RU Ctoro, Capathy ):
     Courter 44 3
     fauth++;
     france [ pas] 2 page [i].
     time [ poo ] 2 Courts;
put ("Memory after inlating "Indi"; page (I)):
                                                            034 = 4
  for G=0; j c Coposity sj +1) &
         if (for from 257 ! = -1)
                                                   told loop feath
              print (" ./.d", fromas [i]):
    elso prints ("_ ");
  put (" Total logo fouts = ol d \n", fauts):
   Setur 0;
```

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1

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13

3

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Typut: 18 rold of many Exter to member of page : 12 Bally Contro Enter to reform string: 13 03 5 6 3 0 6 417 Exten to number of from: 3 Outrat : 1:1-3:13-0:130 3:130 factor of: 5:530 Depop o Goog Laws 6:560 3:360 fine [par] - lands . 6:360 6 = 360 TCCOpped : " : p of began if to mounder from 4 = 460 3C+15 April 2 2 (00 B) of 1:410 7:417 C== [[] and of /3 Total logo fauts = 9,

they " " of I long forthe : of I low " Hay

Sample Output:

Enter number of frames: 3 Enter number of pages: 6 Enter reference string: 5 7 5 6 7 3

5-1-1

57-1

576 576

376

Total Page Faults = 4

Result:

Thus LRU pag replacement algorithm is implemental and executed Successfully.

Ex. No.: 11c)
Date: 23/4/25

Optimal

To write a c program to implement Optimal page replacement algorithm.

ALGORITHM:

- 1. Start the process
- 2. Declare the size
- 3. Get the number of pages to be inserted
- 4. Get the value
- 5. Declare counter and stack
- 6. Select the least frequently used page by counter value
- 7. Stack them according the selection.
- 8. Display the values
- 9. Stop the process

PROGRAM:

include a studio . h? # defro MAX 100 int probed [int pages [], int from [], cit of int into, int Capacity & int result 2-1, forthat = inde ; for Cutizo; ic Capaily: it) & for Cj = index; j < n; j+1) {

if C frames (i) == peges Sj) {

if Cj > footbal) {

footbal = j:

rouble i:

Sopra Ships for Elled Confess Sant 4(J==n) leter i; sections (sant 2-1)? o: sant (Cooper of cop) work ent main (X int page IMAXI, from CMAXI! int n, Equity, faults 20, hit 20; itijsk, fillso: ((1) dad 1. g. 1. m) Arad point (" Ext the Number of logo: "): to Chapter apollo 1843 Seof ("./.d", 2 n); pront (" Enter the response string: "). for lai=0; ic a:, in se Georf (". hd", h pages [i]): part (" Enter the number of frama: "). Scool (". hd", & Coports). for Ci=0; i c Coparty; in) & for Cizo; icn; i+1){ int fords 0: for G=0: j c Caparely in 11 15 if (frames () = : pago [2) {

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of (! fal) & if (fills a Caparly) ? frame (fill++) = page [i] int pos-produit (page, bromos, n, 5+1, Capasty): from [pos]e pages[i]: CX PT FRAN , GARGINAS . fault 4: edo, logosty, fallo a o lateou 10 -18/4 , Fifither or point (".1.d", page (:)); part to set to Marke of Ego "). for Ck20; k2 aposity; k++) x · (0.2, 16.1.0) food if C france [k.7!=- DE posts (" of d", fore (KI): } 3 pat ("-"): part (Fit to number of from "). peat (" In "); path l' Total Rog fauts 2. [d' n' fauts): prent ("Total Rogo Hat = - (-d1,", het); seturo;

Output:

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Entr the response stry : 130356306417 Entr the response stry : 130356306417

1:1--

3:13-

01 130

3:130

5:530

6.560

3:563

6:503

6:603

4:604

1: 104

7:174

Total logo faults 29

Edd page Hits = 3

Result:

Thus, optimal page replacement algorithms ix implemental and executed becausefully.

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