



NED UNIVERSITY OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & IT Specialization in Data Science

CT-353 OPERATING SYSTEMS

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LAB : 10

[*] OS LAB 10.cpp

```
1  #include <iostream>
2  using namespace std;
3
4  int main() {
5      int ms, ps, nop, np, rempages;
6      int s[10], fno[10][20];
7      int i, j, x, y, pa, offset;
8
9      // Input total memory size
10     cout << "\nEnter the memory size -- ";
11     cin >> ms;
12
13     // Input page size
14     cout << "\nEnter the page size -- ";
15     cin >> ps;
16
17     nop = ms / ps; // Number of pages in memory
18     cout << "\nThe number of pages available in memory are -- " << nop;
19
20     // Input number of processes
21     cout << "\nEnter number of processes -- ";
22     cin >> np;
23
24     rempages = nop;
25
26     // Input for each process
27     for (i = 1; i <= np; i++) {
28         cout << "\nEnter number of pages required for p[" << i << "] -- ";
29         cin >> s[i];
30
31         if (s[i] > rempages) {
32             cout << "\nMemory is Full";
33             break;
34         }
35
36         rempages -= s[i];
37         cout << "\nEnter page table for p[" << i << "] ---\n";
38
39         for (j = 0; j < s[i]; j++) {
40             cout << "Page " << j << " ? Frame: ";
41             cin >> fno[i][j];
42         }
43     }
44 }
```

Activate Window
Go to Settings to activate

```
44
45     // Logical to Physical Address translation
46     cout << "\nEnter Logical Address to find Physical Address";
47     cout << "\nEnter process no., page number and offset -- ";
48     cin >> x >> y >> offset;
49
50     if (x > np || y >= s[x] || offset >= ps) {
51         cout << "\nInvalid Process or Page Number or Offset";
52     } else {
53         pa = fno[x][y] * ps + offset;
54         cout << "\nThe Physical Address is -- " << pa;
55     }
56
57     return 0;
58 }
59 }
```

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OUTPUT:

```
C:\Users\marya\Downloads\O x + v - □ X

Enter the memory size -- 1000

Enter the page size -- 100

The number of pages available in memory are -- 10
Enter number of processes -- 2

Enter number of pages required for p[1] -- 3

Enter page table for p[1] ---
Page 0 ? Frame: 5 6 7
Page 1 ? Frame: Page 2 ? Frame:
Enter number of pages required for p[2] -- 4

Enter page table for p[2] ---
Page 0 ? Frame: 1 2 3 4
Page 1 ? Frame: Page 2 ? Frame: Page 3 ? Frame:
Enter Logical Address to find Physical Address
Enter process no., page number and offset -- 1 2 50

The Physical Address is -- 750
-----
Process exited after 41.58 seconds with return value 0
Press any key to continue . . .
```