FIFO Simulation

Start of Simulation

```
Please enter your selection: 4

Please enter the number of physical frames [1-7]: 5


--------------------------------------------------------------------------------
 FIFO SIMULATION
--------------------------------------------------------------------------------
Reference String |  0  1  2  3  4  5  6  7  8  9  0  9  1  8  2  7  3  6  4  5
--------------------------------------------------------------------------------
Physical Frame 0 |  0
--------------------------------------------------------------------------------
Physical Frame 1 |
--------------------------------------------------------------------------------
Physical Frame 2 |
--------------------------------------------------------------------------------
Physical Frame 3 |
--------------------------------------------------------------------------------
Physical Frame 4 |
--------------------------------------------------------------------------------
     Page Faults |  F
--------------------------------------------------------------------------------
   Victim Frames |
--------------------------------------------------------------------------------

Total Number of Page Faults: 1

Press enter to continue...
```

Middle of Simulation

```
--------------------------------------------------------------------------------
 FIFO SIMULATION
--------------------------------------------------------------------------------
Reference String |  0  1  2  3  4  5  6  7  8  9  0  9  1  8  2  7  3  6  4  5
--------------------------------------------------------------------------------
Physical Frame 0 |  0  0  0  0  0  5  5  5  5  5
--------------------------------------------------------------------------------
Physical Frame 1 |     1  1  1  1  1  6  6  6  6
--------------------------------------------------------------------------------
Physical Frame 2 |        2  2  2  2  2  7  7  7
--------------------------------------------------------------------------------
Physical Frame 3 |           3  3  3  3  3  8  8
--------------------------------------------------------------------------------
Physical Frame 4 |              4  4  4  4  4  9
--------------------------------------------------------------------------------
     Page Faults |  F  F  F  F  F  F  F  F  F  F
--------------------------------------------------------------------------------
   Victim Frames |              0  1  2  3  4
--------------------------------------------------------------------------------

Total Number of Page Faults: 10

Press enter to continue...


--------------------------------------------------------------------------------
 FIFO SIMULATION
--------------------------------------------------------------------------------
Reference String |  0  1  2  3  4  5  6  7  8  9  0  9  1  8  2  7  3  6  4  5
--------------------------------------------------------------------------------
Physical Frame 0 |  0  0  0  0  0  5  5  5  5  5  0
--------------------------------------------------------------------------------
Physical Frame 1 |     1  1  1  1  1  6  6  6  6  6
--------------------------------------------------------------------------------
Physical Frame 2 |        2  2  2  2  2  7  7  7  7
--------------------------------------------------------------------------------
Physical Frame 3 |           3  3  3  3  3  8  8  8
--------------------------------------------------------------------------------
Physical Frame 4 |              4  4  4  4  4  9  9
--------------------------------------------------------------------------------
     Page Faults |  F  F  F  F  F  F  F  F  F  F  F
--------------------------------------------------------------------------------
   Victim Frames |              0  1  2  3  4  5
--------------------------------------------------------------------------------

Total Number of Page Faults: 11

Press enter to continue...
```

End of Simulation

```
--------------------------------------------------------------------------------
 FIFO SIMULATION
--------------------------------------------------------------------------------
Reference String |  0  1  2  3  4  5  6  7  8  9  0  9  1  8  2  7  3  6  4  5
--------------------------------------------------------------------------------
Physical Frame 0 |  0  0  0  0  0  5  5  5  5  5  0  0  0  0  0  0  0  6  6  6
--------------------------------------------------------------------------------
Physical Frame 1 |     1  1  1  1  1  6  6  6  6  6  6  1  1  1  1  1  1  4  4
--------------------------------------------------------------------------------
Physical Frame 2 |        2  2  2  2  2  7  7  7  7  7  7  7  2  2  2  2  2  5
--------------------------------------------------------------------------------
Physical Frame 3 |           3  3  3  3  3  8  8  8  8  8  8  8  7  7  7  7  7
--------------------------------------------------------------------------------
Physical Frame 4 |              4  4  4  4  4  9  9  9  9  9  9  9  3  3  3  3
--------------------------------------------------------------------------------
     Page Faults |  F  F  F  F  F  F  F  F  F  F  F     F     F  F  F  F  F  F
--------------------------------------------------------------------------------
   Victim Frames |              0  1  2  3  4  5     6     7  8  9  0  1  2
--------------------------------------------------------------------------------

Total Number of Page Faults: 18
```

OPT Simulation

```
OPT SIMULATION
-----------------------------------------------------------------
Reference String |  0  1  2  3  4  5  6  7  8  9  0  9  1  8  2  7  3  6  4  5
-----------------------------------------------------------------
Physical Frame 0 |  0
-----------------------------------------------------------------
Physical Frame 1 |
-----------------------------------------------------------------
Physical Frame 2 |
-----------------------------------------------------------------
Physical Frame 3 |
-----------------------------------------------------------------
Physical Frame 4 |
-----------------------------------------------------------------
     Page Faults |  F
-----------------------------------------------------------------
   Victim Frames |
-----------------------------------------------------------------

Total Number of Page Faults: 1

Press enter to continue...
```

```
OPT SIMULATION
-----------------------------------------------------------------
Reference String |  0  1  2  3  4  5  6  7  8  9  0  9  1  8  2  7  3  6  4  5
-----------------------------------------------------------------
Physical Frame 0 |  0  0  0  0  0  0  0  0  0  0
-----------------------------------------------------------------
Physical Frame 1 |     1  1  1  1  1  1  1  1  1
-----------------------------------------------------------------
Physical Frame 2 |        2  2  2  2  2  2  2  2
-----------------------------------------------------------------
Physical Frame 3 |           3  3  3  3  3  8  8
-----------------------------------------------------------------
Physical Frame 4 |              4  5  6  7  7  9
-----------------------------------------------------------------
     Page Faults |  F  F  F  F  F  F  F  F  F  F
-----------------------------------------------------------------
   Victim Frames |                 4  5  6  3  7
-----------------------------------------------------------------

Total Number of Page Faults: 10

Press enter to continue...


OPT SIMULATION
-----------------------------------------------------------------
Reference String |  0  1  2  3  4  5  6  7  8  9  0  9  1  8  2  7  3  6  4  5
-----------------------------------------------------------------
Physical Frame 0 |  0  0  0  0  0  0  0  0  0  0  0  0
-----------------------------------------------------------------
Physical Frame 1 |     1  1  1  1  1  1  1  1  1  1  1
-----------------------------------------------------------------
Physical Frame 2 |        2  2  2  2  2  2  2  2  2
-----------------------------------------------------------------
Physical Frame 3 |           3  3  3  3  3  8  8  8
-----------------------------------------------------------------
Physical Frame 4 |              4  5  6  7  7  9  9
-----------------------------------------------------------------
     Page Faults |  F  F  F  F  F  F  F  F  F  F
-----------------------------------------------------------------
   Victim Frames |                 4  5  6  3  7
-----------------------------------------------------------------

Total Number of Page Faults: 10

Press enter to continue...
```

```
OPT SIMULATION
-----------------------------------------------------------------
Reference String |  0  1  2  3  4  5  6  7  8  9  0  9  1  8  2  7  3  6  4  5
-----------------------------------------------------------------
Physical Frame 0 |  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  7  3  6  4  5
-----------------------------------------------------------------
Physical Frame 1 |     1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
-----------------------------------------------------------------
Physical Frame 2 |        2  2  2  2  2  2  2  2  2  2  2  2  2  2  2  2  2  2
-----------------------------------------------------------------
Physical Frame 3 |           3  3  3  3  3  8  8  8  8  8  8  8  8  8  8  8  8
-----------------------------------------------------------------
Physical Frame 4 |              4  5  6  7  7  9  9  9  9  9  9  9  9  9  9  9
-----------------------------------------------------------------
     Page Faults |  F  F  F  F  F  F  F  F  F  F              F  F  F  F  F
-----------------------------------------------------------------
   Victim Frames |                 4  5  6  3  7              0  7  3  6  4
-----------------------------------------------------------------

Total Number of Page Faults: 15
```

LRU Simulation

Start of Simulation

```
 LRU SIMULATION
-----------------------------------------------------------------
Reference String |  0  1  2  3  4  5  6  7  8  9  0  9  1  8  2  7  3  6  4  5
-----------------------------------------------------------------
Physical Frame 0 |  0
-----------------------------------------------------------------
Physical Frame 1 |
-----------------------------------------------------------------
Physical Frame 2 |
-----------------------------------------------------------------
Physical Frame 3 |
-----------------------------------------------------------------
Physical Frame 4 |
-----------------------------------------------------------------
    Page Faults |  F
-----------------------------------------------------------------
   Victim Frames |
-----------------------------------------------------------------

Total Number of Page Faults: 1

Press enter to continue...
```

Middle of Simulation

```
 LRU SIMULATION
-----------------------------------------------------------------
Reference String |  0  1  2  3  4  5  6  7  8  9  0  9  1  8  2  7  3  6  4  5
-----------------------------------------------------------------
Physical Frame 0 |  0  0  0  0  0  5  5  5  5  5
-----------------------------------------------------------------
Physical Frame 1 |     1  1  1  1  1  6  6  6  6
-----------------------------------------------------------------
Physical Frame 2 |        2  2  2  2  2  7  7  7
-----------------------------------------------------------------
Physical Frame 3 |           3  3  3  3  3  8  8
-----------------------------------------------------------------
Physical Frame 4 |              4  4  4  4  4  9
-----------------------------------------------------------------
    Page Faults |  F  F  F  F  F  F  F  F  F  F
-----------------------------------------------------------------
   Victim Frames |              0  1  2  3  4
-----------------------------------------------------------------

Total Number of Page Faults: 10

Press enter to continue...


 LRU SIMULATION
-----------------------------------------------------------------
Reference String |  0  1  2  3  4  5  6  7  8  9  0  9  1  8  2  7  3  6  4  5
-----------------------------------------------------------------
Physical Frame 0 |  0  0  0  0  0  5  5  5  5  5  0
-----------------------------------------------------------------
Physical Frame 1 |     1  1  1  1  1  6  6  6  6  6
-----------------------------------------------------------------
Physical Frame 2 |        2  2  2  2  2  7  7  7  7
-----------------------------------------------------------------
Physical Frame 3 |           3  3  3  3  3  8  8  8
-----------------------------------------------------------------
Physical Frame 4 |              4  4  4  4  4  9  9
-----------------------------------------------------------------
    Page Faults |  F  F  F  F  F  F  F  F  F  F  F
-----------------------------------------------------------------
   Victim Frames |              0  1  2  3  4  5
-----------------------------------------------------------------

Total Number of Page Faults: 11

Press enter to continue...
```

End of Simulation

```
 LRU SIMULATION
-----------------------------------------------------------------
Reference String |  0  1  2  3  4  5  6  7  8  9  0  9  1  8  2  7  3  6  4  5
-----------------------------------------------------------------
Physical Frame 0 |  0  0  0  0  0  5  5  5  5  5  0  0  0  0  0  7  7  7  7  7
-----------------------------------------------------------------
Physical Frame 1 |     1  1  1  1  1  6  6  6  6  6  6  1  1  1  1  1  6  6  6
-----------------------------------------------------------------
Physical Frame 2 |        2  2  2  2  2  7  7  7  7  7  7  7  2  2  2  2  2  5
-----------------------------------------------------------------
Physical Frame 3 |           3  3  3  3  3  8  8  8  8  8  8  8  8  8  8  8  4  4
-----------------------------------------------------------------
Physical Frame 4 |              4  4  4  4  4  9  9  9  9  9  9  9  9  3  3  3  3
-----------------------------------------------------------------
    Page Faults |  F  F  F  F  F  F  F  F  F  F  F     F     F  F  F  F  F  F
-----------------------------------------------------------------
   Victim Frames |              0  1  2  3  4  5     6     7  0  9  1  8  2
-----------------------------------------------------------------

Total Number of Page Faults: 18
```

LFU Simulation

Start of Simulation

```
Please enter your selection: 7

Please enter the number of physical frames [1-7]: 5


---------------------------------------------------------------------------
 LFU SIMULATION
---------------------------------------------------------------------------
Reference String |  0  1  2  3  4  5  6  7  8  9  0  9  1  8  2  7  3  6  4  5
---------------------------------------------------------------------------
Physical Frame 0 |  0
---------------------------------------------------------------------------
Physical Frame 1 |
---------------------------------------------------------------------------
Physical Frame 2 |
---------------------------------------------------------------------------
Physical Frame 3 |
---------------------------------------------------------------------------
Physical Frame 4 |
---------------------------------------------------------------------------
     Page Faults |  F
---------------------------------------------------------------------------
   Victim Frames |
---------------------------------------------------------------------------

Total Number of Page Faults: 1

Press enter to continue...
```

Middle of Simulation

```
---------------------------------------------------------------------------
 LFU SIMULATION
---------------------------------------------------------------------------
Reference String |  0  1  2  3  4  5  6  7  8  9  0  9  1  8  2  7  3  6  4  5
---------------------------------------------------------------------------
Physical Frame 0 |  0  0  0  0  0  5  6  7  8  9
---------------------------------------------------------------------------
Physical Frame 1 |     1  1  1  1  1  1  1  1  1
---------------------------------------------------------------------------
Physical Frame 2 |        2  2  2  2  2  2  2  2
---------------------------------------------------------------------------
Physical Frame 3 |           3  3  3  3  3  3  3
---------------------------------------------------------------------------
Physical Frame 4 |              4  4  4  4  4  4
---------------------------------------------------------------------------
     Page Faults |  F  F  F  F  F  F  F  F  F  F
---------------------------------------------------------------------------
   Victim Frames |              0  5  6  7  8
---------------------------------------------------------------------------

Total Number of Page Faults: 10

Press enter to continue...


---------------------------------------------------------------------------
 LFU SIMULATION
---------------------------------------------------------------------------
Reference String |  0  1  2  3  4  5  6  7  8  9  0  9  1  8  2  7  3  6  4  5
---------------------------------------------------------------------------
Physical Frame 0 |  0  0  0  0  0  5  6  7  8  9  0
---------------------------------------------------------------------------
Physical Frame 1 |     1  1  1  1  1  1  1  1  1  1
---------------------------------------------------------------------------
Physical Frame 2 |        2  2  2  2  2  2  2  2  2
---------------------------------------------------------------------------
Physical Frame 3 |           3  3  3  3  3  3  3  3
---------------------------------------------------------------------------
Physical Frame 4 |              4  4  4  4  4  4  4
---------------------------------------------------------------------------
     Page Faults |  F  F  F  F  F  F  F  F  F  F  F
---------------------------------------------------------------------------
   Victim Frames |              0  5  6  7  8  9
---------------------------------------------------------------------------

Total Number of Page Faults: 11

Press enter to continue...
```

End of Simulation

```
---------------------------------------------------------------------------
 LFU SIMULATION
---------------------------------------------------------------------------
Reference String |  0  1  2  3  4  5  6  7  8  9  0  9  1  8  2  7  3  6  4  5
---------------------------------------------------------------------------
Physical Frame 0 |  0  0  0  0  0  5  6  7  8  9  0  9  9  8  8  7  7  6  6  5
---------------------------------------------------------------------------
Physical Frame 1 |     1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
---------------------------------------------------------------------------
Physical Frame 2 |        2  2  2  2  2  2  2  2  2  2  2  2  2  2  2  2  2  2
---------------------------------------------------------------------------
Physical Frame 3 |           3  3  3  3  3  3  3  3  3  3  3  3  3  3  3  3  3
---------------------------------------------------------------------------
Physical Frame 4 |              4  4  4  4  4  4  4  4  4  4  4  4  4  4  4  4
---------------------------------------------------------------------------
     Page Faults |  F  F  F  F  F  F  F  F  F  F  F        F     F     F     F
---------------------------------------------------------------------------
   Victim Frames |              0  5  6  7  8  9  0     9     8     7     6
---------------------------------------------------------------------------

Total Number of Page Faults: 16
```