



PERATING SYSTEM

# PAGE REPLACEMENT

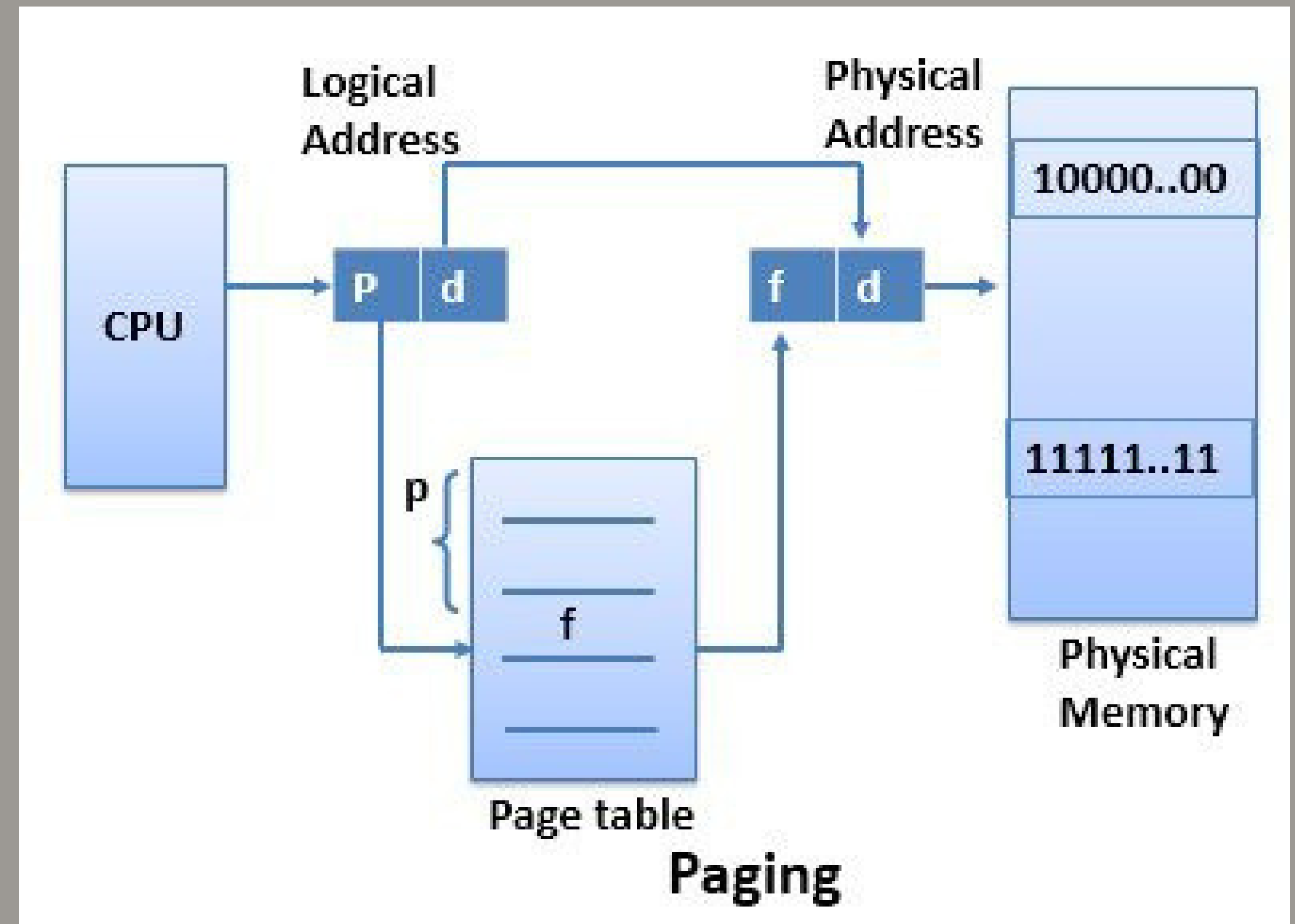
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## BASIC METHOD OF

# PAGING

The basic method for implementing paging involves breaking physical memory into fixed-sized blocks called frames and breaking logical memory (VM) into blocks of the same size called pages.



# 3 ALGORITHM OF PAGE REPLACEMENT

- **FIRST IN FIRST OUT**
- **LEAST RECENTLY USED**
- **OPTIMAL**

# FIFO ALGORITHM

```
print("-----FIFO-----\n")
frameList.clear()
history.clear()
var faultCounter = 0

for (i : Int in 0 until resource.size) {
    if (frameList.contains(resource[i])) {
        print("HIT: $frameList\n")
    } else {
        if (frameList.size == frame) {
            val tempIndex : Int = frameList.i
            frameList[tempIndex] = resource[
            history.removeAt(index: 0)
            history.add(resource[i])
            faultCounter++
            print("FAULT: $frameList\n")
        } else {
            frameList.add(resource[i])
            history.add(resource[i])
        }
    }
}
```

# LRU ALGORITHM

```
print("-----LRU-----\n")
frameList.clear()
history.clear()

var history = ArrayList<Int>()
var faultCounter = 0
var hitCounter = 0
var recent = ArrayList<Int>()

for (i : Int in 0 until resource.size) {

    if (frameList.contains(resource[i]))
        history.add(resource[i])
        print("HIT:\tframeList\n")
        recent.remove(resource[i])
        recent.add(resource[i])
        hitCounter++

    } else {
```

# OPTIMAL ALGORITHM

```
print("-----Optimal-----\n")

frameList.clear()
history.clear()

var previousFault: Int? = null
var faultCounter = 0
var hitCounter = 0

for (i : Int in 0 until resource.size) {

    if (frameList.contains(resource[i])) {
        print("HIT: $frameList\n")
        history.add(resource[i])
        hitCounter++
    } else {
        if (frameList.size < frame!!) {
            // if frame is still free
            frameList.add(resource[i])
            history.add(resource[i])
        }
    }
}
```

-----FIFO-----

Added: [5]  
Added: [5, 7]  
Added: [5, 7, 3]  
Fault: [8, 7, 3]  
Fault: [8, 2, 3]  
Hit: [8, 2, 3]  
Hit: [8, 2, 3]  
Fault: [8, 2, 1]  
Fault: [7, 2, 1]  
Fault: [7, 8, 1]  
Page Fault: 5

-----LRU-----

Added: [5]

SOME PARTS  
OF RESULT



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# THANK YOU

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