LRUPractical

**import** java.util.Scanner;

**public** **class** LRU {

**private** **static** **int** getLRUPageIndex(**int**[] buffer, **int**[] reference, **int** currentIndex) {

**int** lruIndex = 0;

**int** leastRecentlyUsed = currentIndex;

**for** (**int** i = 0; i < buffer.length; i++) {

**boolean** found = **false**;

**for** (**int** j = currentIndex - 1; j >= 0; j--) {

**if** (buffer[i] == reference[j]) {

found = **true**;

**if** (j < leastRecentlyUsed) {

leastRecentlyUsed = j;

lruIndex = i;

}

**break**;

}

}

**if** (!found) {

**return** i;

}

}

**return** lruIndex;

}

**public** **static** **void** main(String[] args) {

Scanner scanner = **new** Scanner(System.***in***);

System.***out***.print("Enter the number of frames: ");

**int** frame\_len = scanner.nextInt();

System.***out***.print("Enter the number of references: ");

**int** ref\_len = scanner.nextInt();

**int**[] reference = **new** **int**[ref\_len];

System.***out***.println("Enter the reference string ");

**for** (**int** i = 0; i < ref\_len; i++) {

reference[i] = scanner.nextInt();

}

**int** fault = 0, hit = 0;

**int**[] buffer = **new** **int**[frame\_len];

**int**[][] matrix = **new** **int**[ref\_len][frame\_len];

**for** (**int** i = 0; i < frame\_len; i++) {

buffer[i] = -1;

}

**for** (**int** i = 0; i < ref\_len; i++) {

**int** search = -1;

**for** (**int** j = 0; j < frame\_len; j++) {

**if** (buffer[j] == reference[i]) {

hit++;

search = 1;

**break**;

}

}

**if** (search == -1) {

**int** replaceIndex = *getLRUPageIndex*(buffer, reference, i);

buffer[replaceIndex] = reference[i];

fault++;

}

**for** (**int** j = 0; j < frame\_len; j++) {

matrix[i][j] = buffer[j];

}

}

System.***out***.println("Page frames after each reference:");

**for** (**int** i = 0; i < ref\_len; i++) {

**for** (**int** j = 0; j < frame\_len; j++) {

**if** (matrix[i][j] == -1) {

System.***out***.print("-\t");

} **else** {

System.***out***.print(matrix[i][j] + "\t");

}

}

System.***out***.print("\n");

}

System.***out***.println("Page fault: " + fault + "\tPage hit: " + hit);

scanner.close();

}

}

Output:



