

## Page Replacement – LRU-12

```
import java.util.*;

public class LRU_PageReplacement {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

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

        int frames = sc.nextInt();

        System.out.print("Enter number of pages: ");

        int n = sc.nextInt();

        int[] pages = new int[n];

        System.out.println("Enter page reference string:");

        for (int i = 0; i < n; i++) pages[i] = sc.nextInt();

        ArrayList<Integer> frame = new ArrayList<>(frames);

        int pageFaults = 0;

        for (int i = 0; i < n; i++) {

            int page = pages[i];

            if (!frame.contains(page)) {

                if (frame.size() == frames) {

                    int lru = Integer.MAX_VALUE, indexToRemove = -1;

                    for (int f = 0; f < frame.size(); f++) {

                        int lastUsed = -1;

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

                            if (pages[j] == frame.get(f)) { lastUsed = j; break; }

                        }

                    }

                }

            }

        }

    }

}
```

```

        if (lastUsed < lru) {
            lru = lastUsed;
            indexToRemove = f;
        }
    }
    frame.set(indexToRemove, page);
} else {
    frame.add(page);
}
pageFaults++;
}

System.out.print("Frames: ");
for (int f = 0; f < frames; f++) {
    if (f < frame.size()) System.out.print(frame.get(f) + " ");
    else System.out.print("- ");
}
System.out.println();
}

System.out.println("\nTotal Page Faults = " + pageFaults);
}
}

```