

Java Placement Programs (21 - 50)

21. Radix Sort

```
public class RadixSort {
    static int getMax(int[] arr) {
        int max = arr[0];
        for (int i = 1; i < arr.length; i++)
            if (arr[i] > max)
                max = arr[i];
        return max;
    }
    static void countSort(int[] arr, int exp) {
        int n = arr.length;
        int[] output = new int[n];
        int[] count = new int[10];
        for (int i = 0; i < n; i++)
            count[(arr[i] / exp) % 10]++;
        for (int i = 1; i < 10; i++)
            count[i] += count[i - 1];
        for (int i = n - 1; i >= 0; i--) {
            output[count[(arr[i] / exp) % 10] - 1] = arr[i];
            count[(arr[i] / exp) % 10]--;
        }
        for (int i = 0; i < n; i++)
            arr[i] = output[i];
    }
    static void radixSort(int[] arr) {
        int max = getMax(arr);
        for (int exp = 1; max / exp > 0; exp *= 10)
            countSort(arr, exp);
    }
    public static void main(String[] args) {
        int[] arr = {170, 45, 75, 90, 802, 24, 2, 66};
        radixSort(arr);
        for (int j : arr) System.out.print(j + " ");
    }
}
```