

SEM 3\Exp9\Radix_sort.c

```
1 // Function to get the maximum value in an array
2 int getMax(int arr[], int size)
3 {
4     int max = arr[0];
5     for (int i = 1; i < size; i++)
6         if (arr[i] > max)
7             max = arr[i];
8     return max;
9 }
10
11 // Function to perform counting sort based on a specific digit
12 extern void countingSort(int arr[], int size, int exp);
13
14 void radixSort(int arr[], int size)
15 {
16     // Get the maximum number to know the number of digits
17     int max = getMax(arr, size);
18
19     // Apply counting sort to sort elements based on each digit
20     for (int exp = 1; max / exp > 0; exp *= 10)
21         countingSort(arr, size, exp);
22 }
23
```