

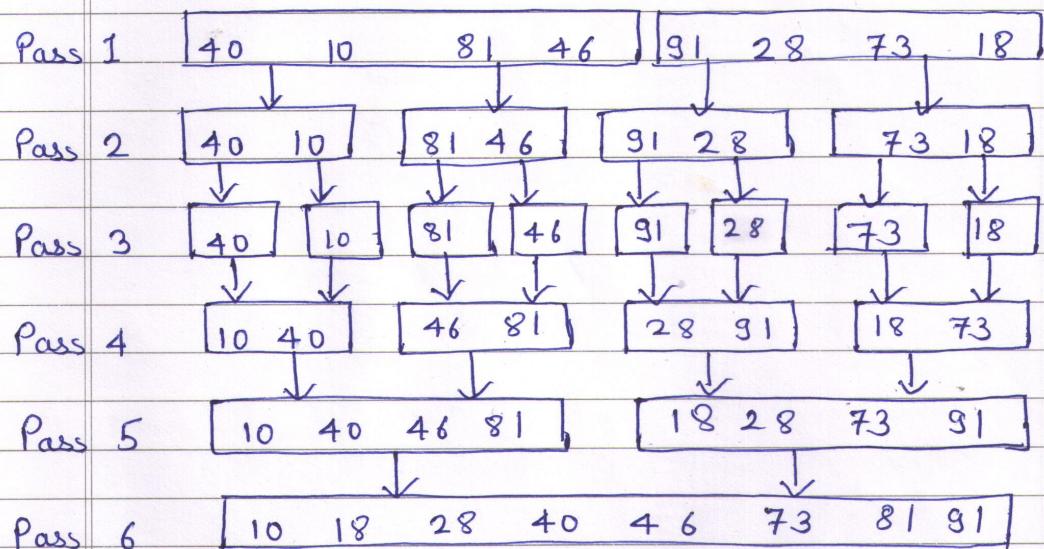
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Set temp[index] = a[j]
Set j = j+1
{End of If}
Set index = index + 1
{End of Loop}
3) [Copy the remaining elements of right sub-array, if any]
If i > mid
    Repeat while j < end
        Set temp[index] = a[j]
        Set index = index + 1
        Set j = j+1
    {End of Loop}
    [Copy the remaining elements of left sub-array, if any]
    Else
        Repeat while i < mid
            Set temp[index] = a[i]
            Set index = index + 1
            Set i = i + 1
        {End of Loop}
    {End of If}
4) [Copy the contents of temp back to a] set k=0
5) Repeat while k < index
    Set a[k] = temp[k]
    Set k = k + 1
{End of Loop}
6) Exit.

```

Eg. Sort the array given below using merge sort.

40	10	82	46	91	28	73	18
0	1	2	3	4	5	6	7



5> Radix Sort :-Radix Sort( $a, n$ )

- 1> Find the largest no. in  $a$  as large.
- 2> [Initialize] Set NOP = No. of digits in large.
- 3> Set pass = 0.
- 4> Repeat step 5 while pass  $< NOP - 1$
- 5> Set i=0 and initialize buckets
- 6> Repeat 7 to 9 while  $i < n-1$
- 7> set digit = digit at pass<sup>th</sup> place in  $a[i]$
- 8> add  $a[i]$  to the bucket numbered digit.
- 9> increment bucket count for bucket numbered digit  
[End of Loop].
- 10> collect the no.'s in bucket.  
[End of Loop]
- 11> Exit.

→ Radix sort is also called as bucket sort.

→ It is a linear sorting algorithm for integers & uses the concept of sorting names in alphabetic order.

→ When we have a list of sorted names, the radix is 26 (or 26 buckets) bcoz there are 26 letters in the English alphabet.

Eg:- Sort the no.'s given below using radix sort.

345, 645, 924, 123, 567, 472, 555, 808, 911.

Pass 1:-

Number	0	1	2	3	4	5	6	7	8	9
345						345				
645						645				
924					924					
123				123						
567								567		
472			472							
555						555				
808									808	
911		911								

Pass 1 Result:- 911, 472, 123, 924, 345, 645, 555, 567, 808

Pass 2:-

Number	0	1	2	3	4	5	6	7	8	9
911		911								
472								472		
123				123						
924		92	924							
345					345					
645						645				
555							555			
567									567	
808	808									