RADIX SORT AND BUCKET SORT

PRESENTED BY

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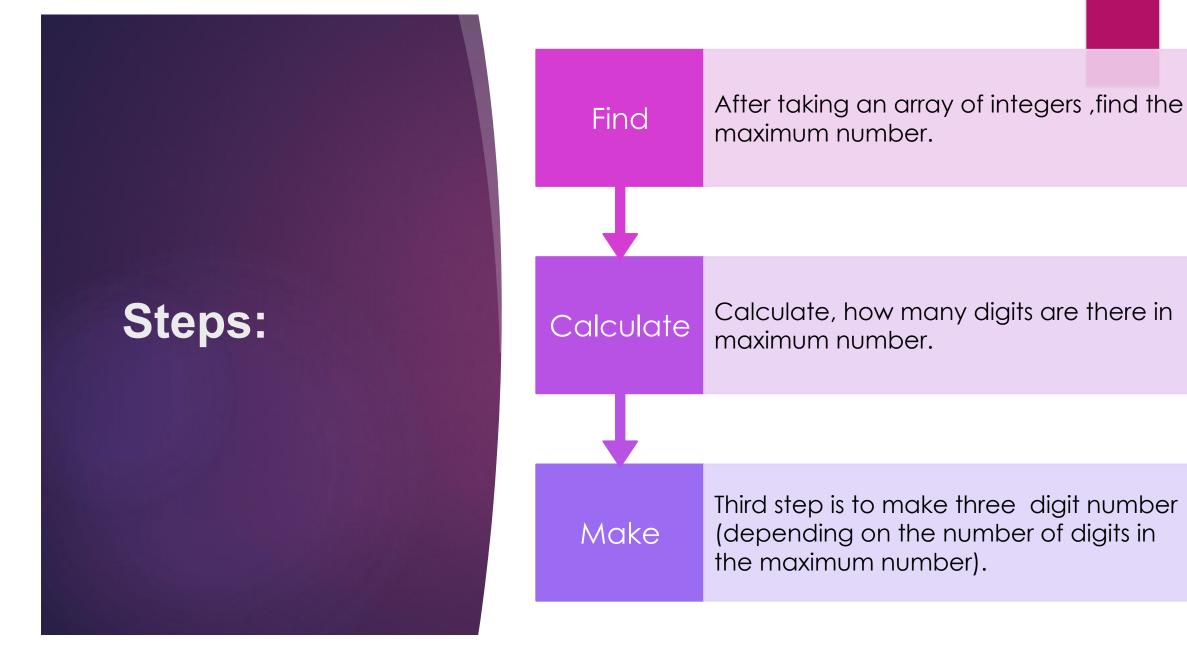
Definition:

Radix sort is a sorting algorithm that sorts the elements by first grouping the individual digits of the same place value.

The radix is the base of a number system

Characteristics:

- ► Radix sort is a non-comparative sorting algorithm. This sorting algorithm works on the integer keys by grouping digits which share the same position and value.
- Start from least significant digit and then move towards most significant digit.



EXAMPLE 254,25,100,45,99,200,35,44,9

- Step 1: Find the maximum number
- 254
- Step 2: Find the number of digits in the maximum number
- 3
- Step 3: Add 0's to the numbers on Most Significant Digit(MSD) positions based on maximum number
- **>** 254,025,100,045,099,200,035,044,009

254,025,100,045,099,200,035,044,009

▶ Step 4: Create 10 buckets, numbered from 0 to 9

0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

254, 025,100, 045, 099,200, 035, 044, 009

0	100	200		
1				
2				
3				
4	254	044		
5	025	045	035	
6				
7				
8				
9	099	009		

100, 200, 254, 044, 025, 045, 035, 099, 009

0	100	200	009	
1				
2	025			
3	035			
4	044	045		
5	254			
6				
7				
8				
9	099			

00, 200, 009, 025, 035, 044, 045, 254, 299

0	009	025	035	044	045	099
1	100					
2	200	254				
3						
4						
5						
6						
7						
8						
9						

RADIX SORT

- ► Step 6:
- Arrange the numbers from bucket 0 to 9
- 009,025,035,044,045,099,100,200,254
- Sorted Elements
- 9,25,35,44,45,99,100,200,254