

Radix sort

implemented by two ways

- 1. using bucket sort**
- 2. using counting array**

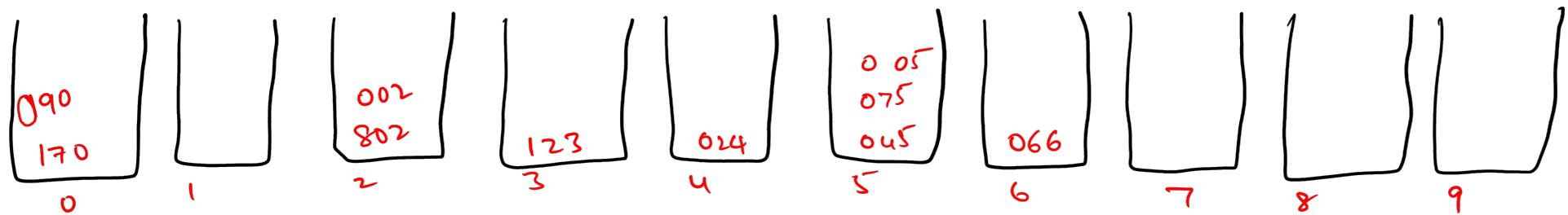
Bucket Count Requirements for Different Data Types in Radix Sort

Data Type	Example Word	Bucket Count Required
Digits (0–9)	12345	10 buckets
Lowercase Letters (a–z)	apple	26 buckets
Uppercase Letters (A–Z)	HELLO	26 buckets
Both Lowercase and Uppercase (a–z, A–Z)	AppleZebra	52 buckets
Digits + Lowercase + Uppercase (0–9, a–z, A–Z)	A1b2Z	62 buckets

Using Buckets

values :.. 170 045 075 090 802 024 002 066 123 005

find units place



move from 0 bucket to 9 bucket and fill the array

0	1	2	3	4	5	6	7	8	9
170	090	802	002	123	024	045	075	005	066

updated array:-

0	1	2	3	4	5	6	7	8	9
170	090	802	002	123	024	045	075	005	066

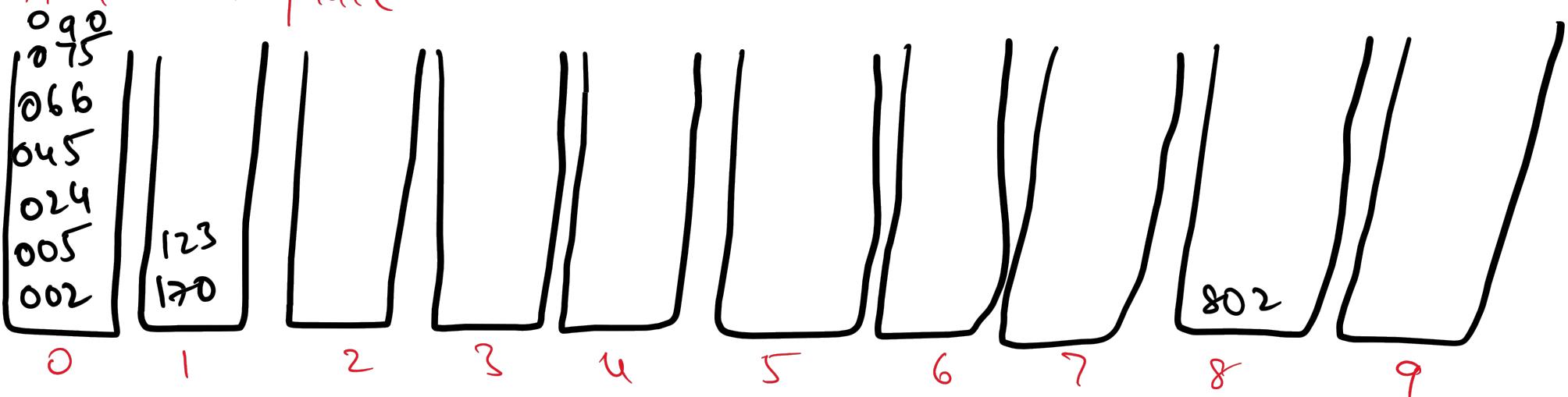
find the 10's place from the above list-

005	002	802	170	024	123													090
0	1	2	3	4	5	6	7	8	9									

170	802	002	005	123	024	045	066	075	090
0	1	2	3	4	5	6	7	8	9

<u>170</u>	<u>802</u>	<u>002</u>	<u>005</u>	<u>123</u>	<u>024</u>	<u>045</u>	<u>066</u>	<u>075</u>	<u>090</u>
0	1	2	3	4	5	6	7	8	9

find the 100 place



0	1	2	3	4	5	6	7	8	9
002	005	024	045	066	075	090	170	123	802

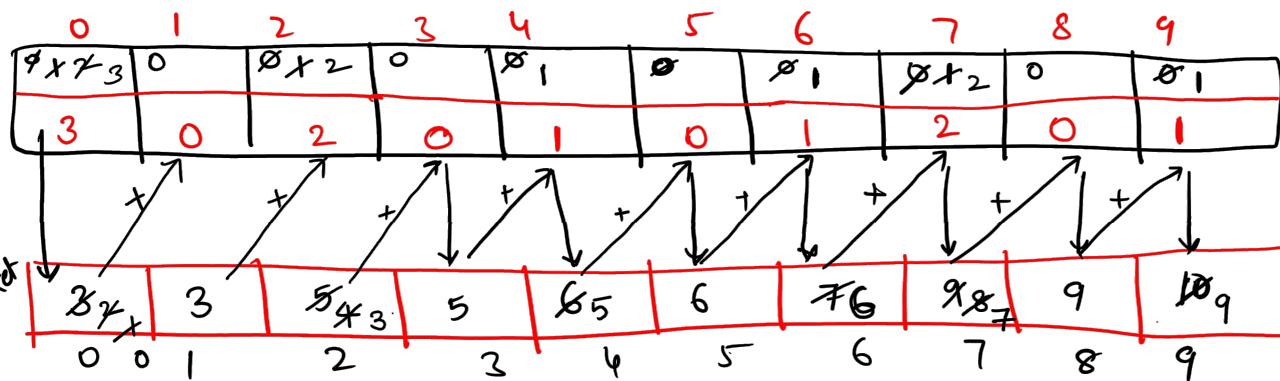
Using Count array

170 → 045 → 075 → 090 → 802 → 024 → 002 → 066 → 123 → 005 → 0

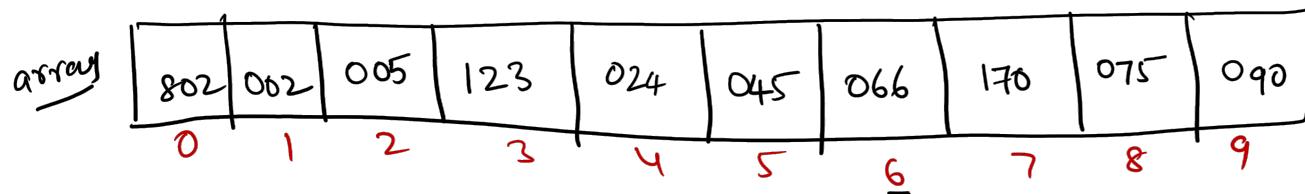


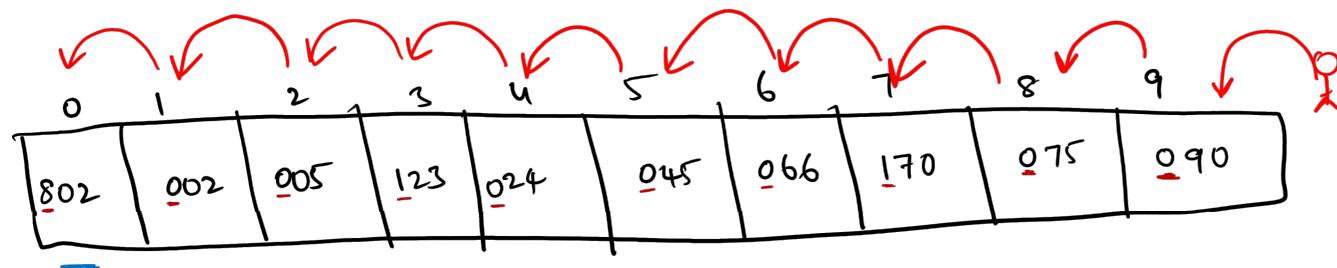
170 → 090 → 802 → 002 → 123 → 024 → 045 → 075 → 005 → 066 → ♂

select 10s place

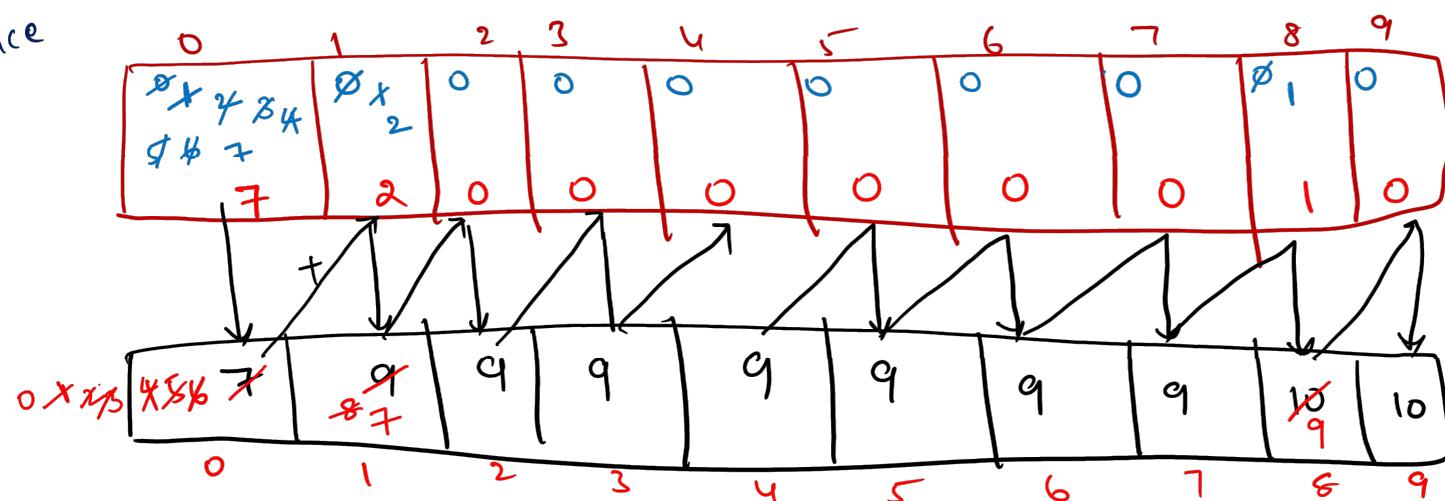


10s place
array





100's place



002	005	024	045	066	075	090	123	170	802
0	1	2	3	4	5	6	7	8	9