

Radix Sort

object

base numbers

(not Roman num)

327

237

$$\sqrt[2]{2.???.} < \sqrt[3]{3.???.}$$

same position

$$\sqrt[5]{1} < \sqrt[1]{1}$$

Radix Sort (Recursive)

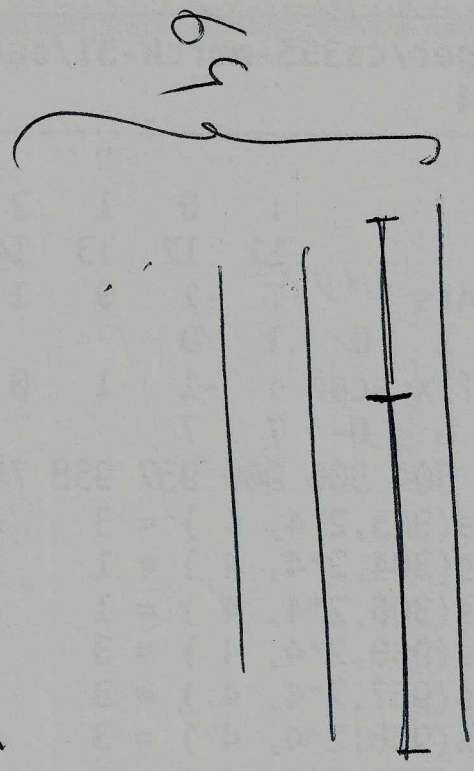
101	111	011	001	110	100
011	001	101	111	110	100
001	101	101	100	111	110
001	011	100	101	110	111

partition.  
no pivot. ←

0(3.5)??

RRS on 64 bit numbers

64 bits (63, 62, ..., 3, 2, 1) 64 iterations



$\underbrace{\hspace{10em}}_{n \text{ size}}$

$$\boxed{O\left(\frac{64}{B} \cdot n\right) = O(\log_2 n \cdot n)}$$

B - Binary number

length (B)  $\log_2 B$

Extra info: |value|  $< 2^{56}$

8 iterations

$$2^{56} - 1$$



# Stable RS

$\downarrow$   
16 82 89 63 16a 79 72 75 19 44

bin  
 $\downarrow$   
 0  $\downarrow$  2  
 72 82 63 44 75 16a 16 7 8 9

$\downarrow$   
 82 72 63 44 75 16a 16a 89 79 19  
 19 16a 16 63 75 72 89 82 8 9

0  $\downarrow$  2  
 19 16a 16 63 44 75 16a 16a 89 79 19  
 44 63 72 75 79 82 89

16 16a 19

$$2^8 = 256$$

0 1  
 0 1 2 3 4 5 6 7 8 9  
 256  
 ASCII