RAMBO model = Random Access Machine with Byte Overlap.
[Fredman & Willard]

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L 3.2
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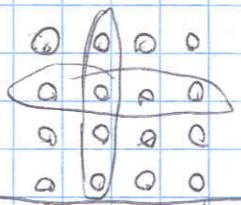
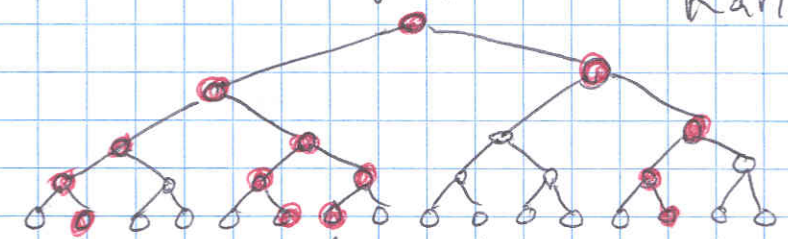
RAM + allow certain bits to overlap from different words

e.g.



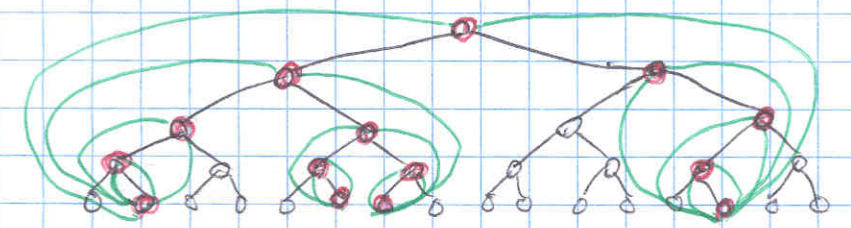
row = word
col = word.
some pairs of words share 1 bit.

VEB: word = root-to-leaf path [Brodnik, Carlsson, Karlsson, Munro 2002]



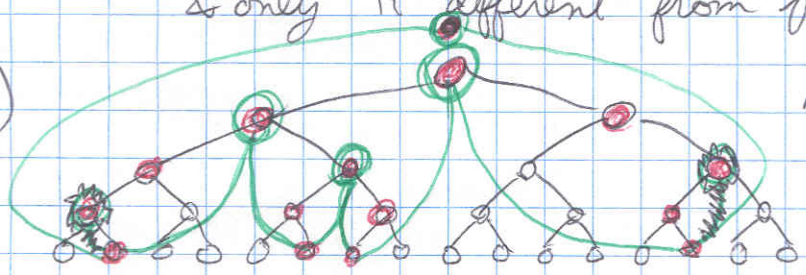
mark present elts. & their ancestors

- can find lowest set ancestor of any universe elt. in O(1) time — ~~least~~ most sig. 1-bit in XOR
- store pointers to min & max in subtree:



- problem: a leaf may have up to 2lg u pointers to it
  ⇒ Insert/Delete requires Ω(lg u) pointer changes.
- instead: store left & right "inside" leaf & only if different from parent ← BRANCHING NODES ONLY HAVE "1" BIT

max(left)
min(right)



~~Find next circled node above you using LSB & XOR.~~

- pointers just use necessary bits ⇒ O(n) total bits (Build-Heap)
- dyn. perfect hashing to find them
- u bits of RAMBO memory (omit leaves)
- implemented as SDRAM memory module [Priqueue AB]