Call a
Rachel
(laire)

$(x-x_0)^n$

clustered Fivella $\geq x$

Lattice + nbasn

hash map < hashcode (string), array > $x = x_0$

$\sum m_i a_i$

m_1, m_2, m_3

12 nn

blue euib

dad..

8

$\binom{a}{d} \binom{1}{2}$

sort each string a

as list b

chr map   get hashcode(a) from map

it no   if (b)

b.add(a)

hash code()

else
put(hashcode(), new list(a))

a b c d
0 0 2

Finding anagrams:
This is the algorithm from above as interpreted by dgc. Hashcode is the string representation of an array of size max#chars with a count from 0 to 9 maximum characters of a kind. (What can you do if there are more than 9 characters of the same letter in a word?)

Kalina
Nora
Neshka

Find a missing value:
large memory
n + n lg n solution

Input file
Output: NULL, integer

Sort list
Compare a pair, if pair is sequential continue
find a gap, print missing number and quit

hash code()

000
002

12 nn

Jordan
Hannah
Clare
Yi

```
bool b = false
int a
for a into->2^32:
    found=true
    while not Eor
        if a = num
            found = false
            break
    if found == true
        return a
```

Rotating a vector (dgc):
Using an extra array of size n, keep track of j, the index of the original array, and k, the index of where to put the next value.
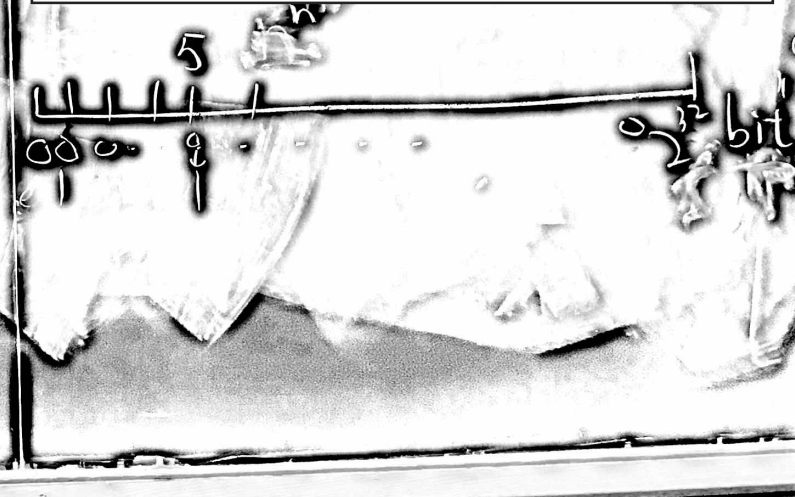
Notice, that only one value is being stored at a time, and once you copy a value from the original array, the value in the array is redundant,

So, just save a pointer to the first value at k in a temporary pointer, and use the old location to store the next value at index k.

Find the missing number:
The bit array, is a different large memory solution that has an order n sort mechanism:
read in each number from the file and use the number as an index to the bit array, then find the first index that is 0 and that index is a missing number
(I forget who brought this solution. Please claim credit.)

File based merge sort (dgc with class). What do you need to keep track of? Level? Number of files at current level? This needs to be fleshed out…

1, 7, 4 root

level

number of files per level