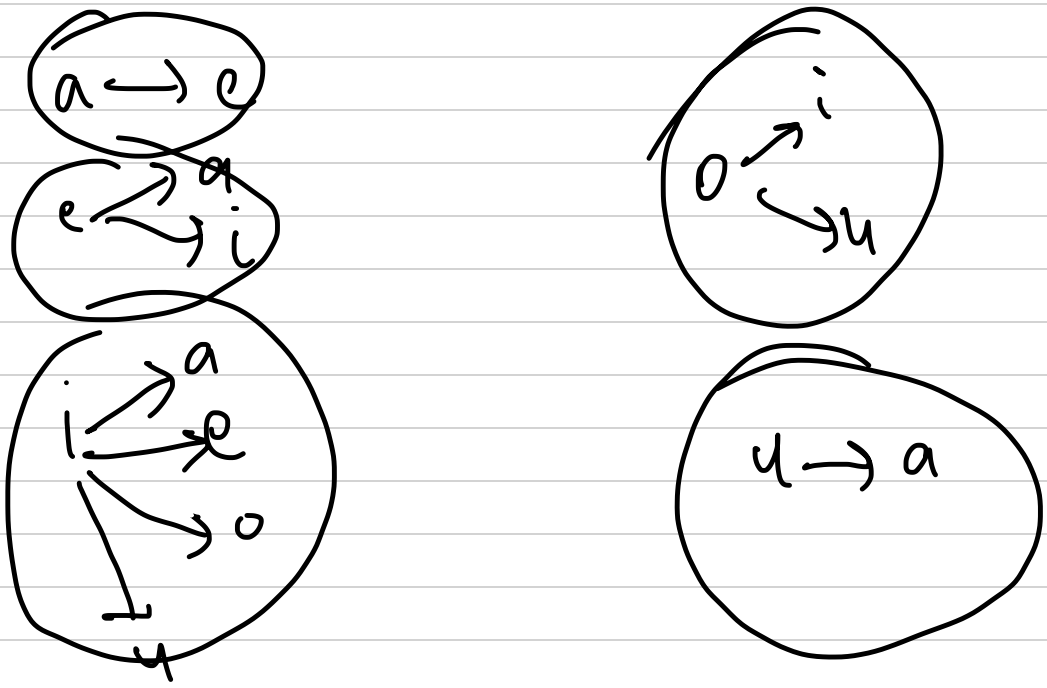
1220 Count Vowels Permutations

(DP) , (Recursion) , (Memoization)



lets define a function say "form_words"

form_words(n , Strs , ans , memo)

- n → How many more chars are added?
- Strs → word currently formed
- ans → ans will be stored here
- memo → storing subproblems

Base Case

```
if n == 0 :  # string is formed
    return 1
```

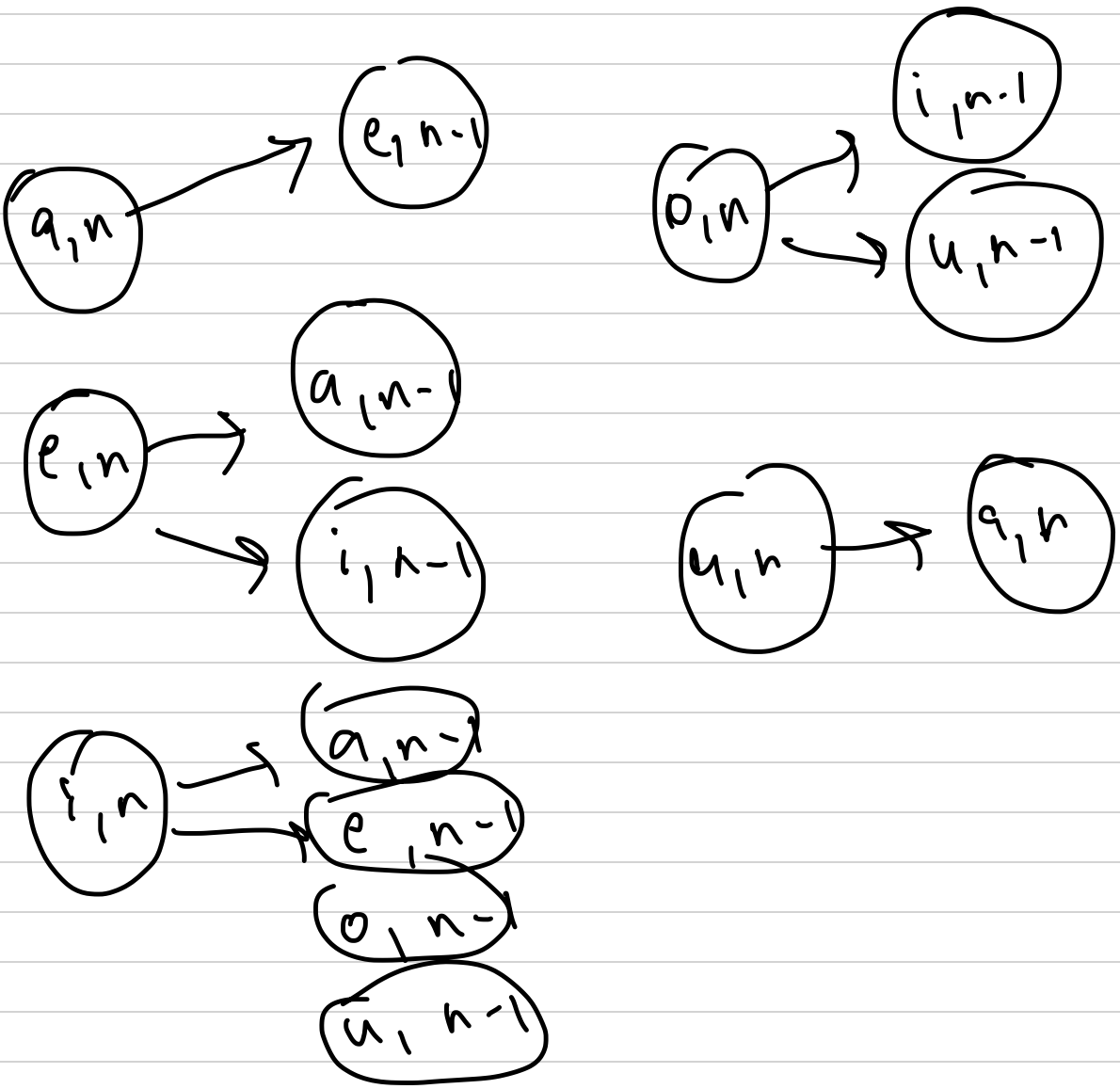
```
form_words( n, strs, ans, memo ) :

    if n == 0 :
        return 1

    if ( strs[(len(strs)-1), n) is memo':
        memo[(strs[(len(strs)-1), n)]

    else
        if strs[(len(strs)-1)] == 'a' :
            t = form_words(n-1, strs + "e", ans, memo)
            memo[("a", n)] = t
            return memo[("a", n)]
```

memo stores how many string exists starting with "ch" and length of string = n

eg ("ch", n)

Similarly write all cases

∴ Basic structure



if n==0:

return 1