

HW 8

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6.4

a.) Valid Words ($S[1 \dots n]$) {

for $i=1$ to n :

for $k=1$ to i :

valid Sequence = dict(substring(k, i), ... substring(i, i))

Check all substrings from $1 \dots n$ for valid words
and creates an array with each valid word

b.)

print(valid Sequence)

6.7 Palindrome($x[1 \dots n]$)

for $i=1$ to n :

for $k=n$ down to 1 :

length = max{($x[i \dots n] = x[1 \dots k]$).length}

Starting from the front and end of the string
it creates a substring where each letter matches
with its mirrored counterpart and finds the max
length of all those substrings

6.22. $f(i, X)$ returns ^{true} 1 if a subset of $[a_1, \dots, a_i]$ equals to X .

for $i = 0$ to n :

for $k = 0$ to t :

if $i = 0$:

$$f(0, k) = (k == 0)$$

else if $X \geq a_i$:

$$f(i, k) = f(i-1, k) \vee f(i-1, k-a_i)$$

else

$$f(i, k) = f(i-1, k)$$

It equals to 0, then the only answers can be zero. If $X \geq a_i$, then a_i can be some remainder of $X - a_k$. If $X < a_i$, then there is a subset that equals to X in $a_i - 1$. This will continue to $f(n, t)$.