

P24

Lets take the first example "csc 3320"

```
c o s c _ _ ] 2 "width"
3 3 2 0 _ _ ]
```

Imagine the width was 4, the container would look like:

```
c o s c _ _ output = 0
```

```
3 3 2 0 _ _ output = 1
```

```
c o s c _ _ ] This ends up repeating. output = 1
3 3 2 0 _ _ ] output = 2
```

Since we now know that at some point, there will be a pattern that repeats, we can use dp.

How?

Say we fill the container until we reach a new "row" and the next word is the word we started with. We will cache how many times the text has fit in a vector (output).

So for width = 4

```
c o s c _ _ first word is "csc", int count = 0 output[0] = count
```

```
3 3 2 0 _ _ count = 1 output[1] = count
```

```
_ _ _ _ _ next word is "csc", since we now know that theres a total
_ _ _ _ _ of 2 repeating rows (lets call this "interval")
we can:  $output[rowIndex - interval] + count$ 
for the following rows. The final output
is 2 since we had 2 whole "csc 3320".
```