

## Output:

```
xxminmin  
zxxxzxxx  
abyyxyxxabyyxyxxabyyxyxx  
□
```

## Code:

```
# Sean Poston  
# 9/2/2021  
  
def decode(encoded:str) -> str:  
    stack = []  
    decoded = ''  
    times = 0  
  
    for i in encoded:  
        # This if statement will grab the times to repeat the number.  
        # It will be in the range [1, 300], so this will cover the  
        # case of multiple numbers.  
        if i.isdigit():  
            times = (times * 10) + int(i)  
        elif i == '[':  
            # Adds current repetitions, times, and current value of decoded  
            # to the stack to be popped on ']'.  
            stack.append(times)  
            stack.append(decoded)  
            decoded = ''  
            times = 0  
        # Pops the rightmost value, times, then pops the previous  
        # string to be added on to the string holder.
```

Violations of academic honesty represent a serious breach of discipline and may be considered grounds for disciplinary action, including dismissal from the University. The University requires that all assignments submitted to faculty members by students be the work of the individual student submitting the work. An exception would be group projects assigned by the instructor. (Source: SEMO website)

```
elif i == ']':
    decoded = stack.pop() + (decoded * stack.pop())
    # Adds message to decoded character by character.
else:
    decoded += i

return decoded

if __name__ == '__main__':
    encodedExamples = ['2[x]3[mn]', '2[z3[x]]', '3[ab2[yy2[x]]]']
    #Should output 'xxmnmnmn' and 'zxxxzxxx'

    for i in range(len(encodedExamples)):
        print(decode(encodedExamples[i]))
```