

```
def parenthesisMatch(string):
    '''Creating 2 keys, open and closed parenthesis are used as keys
       each key has a value between 0-2. Fitting parenthesis of each
       dict share the same value e.g. '(' and ')' both have the value 0.
       This property will be used later, to check whether a popped item
       from the stack matches to the enqueueing one.'''

    open_par = dict(zip(('(', '[', '{'), range(3)))
    closed_par = dict(zip(')', ']', '}'), range(3)))
    stack = []
    for parenthesis in string:
        if parenthesis in open_par: #1. case: opening parenthesis
            stack.append(parenthesis) #stack it
        elif parenthesis in closed_par and not stack: #2. case: closing parenthesis, empty stack
            return False
        elif parenthesis in closed_par and stack: #3. case: clsing parenthesis, stack is not empty
            #need to use '!=' instead of 'is not' in case of longer strings!
            if open_par[stack.pop()] is not closed_par[parenthesis]:
                return False
    else:
        return True and not stack #explaining negation: bool(x) = False, if x = {0, '', (), [], {}, None};

#Complexity: O(n) since it has to iterate through the whole string.
```

```
parenthesisMatch(' (TALK, (PYTHON(), ((TOO((M(E)))'))
```

True

```
parenthesisMatch('a([c{d}]))', parenthesisMatch('{([()])}'))
```

(True, False)

```
parenthesisMatch(' (wr(o(ng)ma)tching(')
```

False

```
parenthesisMatch(''), parenthesisMatch('('), parenthesisMatch('{{')
parenthesisMatch(')'), parenthesisMatch(')'), parenthesisMatch('{{')
```

```
(False, False, False, False)
```