## Live Programming for Validation

```
def dominant_bigram(s):
            . . .
            Return the most common bigram in string s.
            111
                                                                                                      {'ag': 0}
            ## ---
                                                                                                    {'ag': 1, 'gc': 0}
                                                                                                 ('ag': 1, 'gc': 1, 'ct': 0}
            res = ''
                                                                                               {'ag': 1, 'gc': 1, 'ct': 1, 'ta': 0}
                                                                                           5 {'ag': 2, 'gc': 1, 'ct': 1, 'ta': 1, 'gt': 0}
            bigrams = {}
            for i in range(0, len(s) -1):
10
                                                                                                          bigrams
                  bigram = s[i] + s[i + 1]
11
                                                                                                         {'ag': 1}
                                                                                                      {'ag': 1, 'gc': 1}
                  if bigram not in bigrams:
                                                                                                   {'ag': 1, 'gc': 1, 'ct': 1}
12
                                                                                                {'ag': 1, 'gc': 1, 'ct': 1, 'ta': 1}
13
                       bigrams[bigram] = 0
                                                                                                {'ag': 2, 'gc': 1, 'ct': 1, 'ta': 1}
                                                                                           5 {'ag': 2, 'gc': 1, 'ct': 1, 'ta': 1, 'gt': 1}
                  bigrams[bigram] += 1
                                                                                           6 {'ag': 2, 'gc': 1, 'ct': 1, 'ta': 2, 'gt': 1}
14
15
            max_value = max(bigrams.values())

    max_value

16
            for bigram in bigrams:
                  if bigrams[bigram] == max_value:
17
                       res = bigram
18
                                                                                                 res
19
            ## ---
                                                                                                'ag'
20
21
            return res
22
                                                                                                'ta'
23
                                                                                             4
24
      dominant_bigram("agctagta")
```

```
/* # bigran
           dominant_bigram(s):
            1 1 1
           Return the most common bigram in string s.
            1 1 1
           ## ---
           res = ''
                                                                                     5 {'ag': 2, 'gc': 1, 'ct': 1, 'ta': 1, 'gt': 0}
           bigrams = \{\}
10
           for i in range(0, len(s) - 1):
11
                bigram = s[i] + s[i + 1]
                                                                                                  {'ag': 1}
                                                                                               {'ag': 1, 'gc': 1}
                if bigram not in bigrams:
                                                                                         {'ag': 1, 'gc': 1, 'ct': 1, 'ta': 1}
                      bigrams[bigram] = 0
13
                                                                                          {'ag': 2, 'gc': 1, 'ct': 1, 'ta': 1}
                                                                                     5 {'ag': 2, 'gc': 1, 'ct': 1, 'ta': 1, 'gt': 1}
                bigrams[bigram] += 1
14
                                                                                     6 {'ag': 2, 'gc': 1, 'ct': 1, 'ta': 2, 'gt': 1}
15
           max_value = max(bigrams.values())

    max_value

           for bigram in bigrams:
16
                if bigrams[bigram] == max_value:
17
                      res = bigram
18
                                                                                         res
19
           ## ---
                                                                                      0 'ag'
20
21
           return res
22
                                                                                      3 'ta'
      dominant_bigram("agctagta")
```

## Suggestion 2

```
Preview
```

```
res = {}
s = s.lower()
for i in range(0, len(s)):
   if s[i] in res:
        res[s[i]] += 1
   else:
        res[s[i]] = 1
print(res)
for i in res.keys():
   if res[i] < 2:
        res.pop(i)
print(res)
```

## Suggestion 3

## Preview

```
res = ''
bigrams = {}
for i in range(0, len(s) - 1):
```