Code For Best Wordle Strategy

In [1]:

```
from itertools import permutations

from matplotlib import pyplot as plt
```

In [2]:

```
def letter_distribution(words):
    d = {}
    for word in words:
        for letter in word:
            d[letter] = d.get(letter, 0) + 1
    return d


def letter_placement(words):
    d = {0: {}, 1: {}, 2: {}, 3: {}, 4: {}}
    for word in words:
        for i, letter in enumerate(word):
            d[i][letter] = d[i].get(letter, 0) + 1
    return d


def score_placement(word, letter_places):
    score = 0
    for i, letter in enumerate(word):
        score += letter_places[i][letter]
    return score


def subset_from_letters(word: str, words: set) -> set:
    return set(wordle for wordle in words if set(wordle).issubset(word))
```

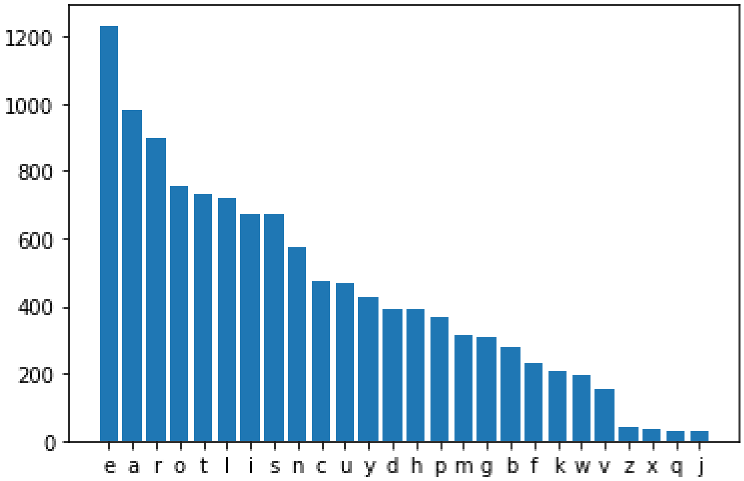
In [3]:

```
# map's lambda takes the first 5 characters of each line
# in wordles.txt, removing the \n character
words = set(map(lambda x: x[:5], open("answer_wordles.txt", "r")))
guess_words = set(map(lambda x: x[:5], open("guess_wordles.txt", "r")))
```

In [4]:

```
letter_dist = letter_distribution(words)
dist = sorted(letter_dist.items(), key=lambda x: x[1], reverse=True)

plt.bar([x[0] for x in dist], [y[1] for y in dist])
plt.show()
```



In [5]:

```
first_words = set(word for word in subset_from_letters("earot", guess_words)
                  if len(set(word)) == 5)
print(first_words)

second_words = set(word for word in subset_from_letters("lisnc", guess_words)
                   if len(set(word)) == 5)
print(second_words)

third_words = set(word for word in subset_from_letters("uydhp", guess_words)
                  if len(set(word)) == 5)
print(third_words)
```

```
{'oater', 'roate', 'orate'}
set()
set()
```

In [6]:

```
exploit_count = 3
letters = "".join([letter for letter, count in dist[:exploit_count * 5]])

print(letters)

for word in permutations(letters):
    first_words = set(w for w in subset_from_letters(
        word[:5], guess_words) if len(set(w)) == 5)
    second_words = set(w for w in subset_from_letters(
        word[5:10], guess_words) if len(set(w)) == 5)
    third_words = set(w for w in subset_from_letters(
        word[10:15], guess_words) if len(set(w)) == 5)
    if first_words and second_words and third_words:
        print(first_words, second_words, third_words)
        break
```

```
earotlisncuydhp
{'oater', 'roate', 'orate'} {'pulis', 'pilus'} {'chynd'}
```

In [7]:

```
letter_places = letter_placement(words)

for word in first_words:
    print(word, score_placement(word, letter_places))

print()
```

```
for word in second_words:
    print(word, score_placement(word, letter_places))

print()

for word in third_words:
    print(word, score_placement(word, letter_places))
```

```
oater 986
roate 1254
orate 1178

pulis 634
pilus 574

chynd 671
```

In [8]:

```
d = {}
for word in words:
    d[word] = score_placement(word, letter_places)

[word for word in sorted(d.items(), key=lambda x: x[1],
                         reverse=True) if len(set(word[0])) == 5][:10]
```

Out[8]:

```
[('slate', 1437),
 ('sauce', 1411),
 ('slice', 1409),
 ('shale', 1403),
 ('saute', 1398),
 ('share', 1393),
 ('shine', 1382),
 ('suite', 1381),
 ('crane', 1378),
 ('saint', 1371)]
```

In [9]:

```
vowel = set(word for word in subset_from_letters("eariu", guess_words)
            if len(set(word)) == 5)
print(vowel, "\n")

for word in vowel:
    print(word, score_placement(word, letter_places))
```

```
{'aurei', 'uraei'}

aurei 819
uraei 936
```