20 String Programs in Python and Solutions

1. Reverse a String

```
s = "hello"
print(s[::-1])
```

2. Check if a String is a Palindrome

```
s = "madam"

if (s == s[::-1]):

 print("Palindrome")

else:

 print("Not Palindrome")
```

3. Count Vowels and Consonants

```
s = "Hello World"

vowels = "aeiouAEIOU"

vc = sum(1 for c in s if c in vowels)

cc = sum(1 for c in s if c.isalpha() and c not in vowels)

print(f"Vowels: {vc}, Consonants: {cc}")
```

4. Check if Two Strings are Anagrams

```
s1 = "listen"

s2 = "silent"

print("Anagram" if sorted(s1) == sorted(s2) else "Not Anagram")
```

5. **Find the Frequency of Each Character**

```
s = "banana"
from collections import Counter
print(dict(Counter(s)))
```

6. Remove All Punctuation from a String

```
import string
s = "Hello, World!"
print(''.join(c for c in s if c not in
string.punctuation))
```

7. Check if a String is a Pangram (contains all letters A-Z)

```
import string
s = "The quick brown fox jumps over the lazy dog"
print(set(string.ascii_lowercase).issubset(s.lower()))
```

8. **Capitalize First Letter of Each Word**

```
s = "hello world"
print(s.title())
```

9. **Replace All Spaces with Hyphens**

s = "Python is fun"

print(s.replace(" ", "-"))

10. Remove Duplicate Characters from a String

```
s = "programming"
result = ""
for c in s:
if c not in result:
result += c
print(result)
```

11. Count the Number of Words in a Sentence

```
s = "Python is a great language"
print(len(s.split()))
```

12. Check if a Substring Exists in a String

```
s = "data science"
sub = "science"
print(sub in s)
```

13. Find the Longest Word in a Sentence

```
s = "Artificial Intelligence is powerful"
print(max(s.split(), key=len))
```

14. Convert a String to Uppercase Without Using `upper()`

```
s = "hello"
print(''.join(chr(ord(c)-32) if 'a' <= c <= 'z' else c for c in s))
```

15. Count the Occurrence of a Substring

```
s = "hello world, hello python"
print(s.count("hello"))
```

16. Remove All Digits from a String

```
s = "abc123xyz456"
print(''.join(c for c in s if not c.isdigit()))
```

17. Convert a Sentence to CamelCase

```
s = "python programming language"
words = s.split()
print(words[0] + ''.join(w.capitalize() for w in words[1:]))
```

18. Print All possible combination of Substrings in a String

```
s = "abc"
for i in range(len(s)):
for j in range(i+1, len(s)+1):
 print(s[i:j])
```

19. Check if a String Contains Only Alphabets

```
s = "Python3"
print(s.isalpha())
```

20. Find the Most Frequent Character in a String

```
from collections import Counter
s = "aabbbbccdd"
counter = Counter(s)
print(counter.most_common(1)[0])
```