20 Python Code Examples: Strings and Lists

String Examples

1. String Concatenation

```
s1 = "Hello"
s2 = "World"
result = s1 + " " + s2
print(result)
```

2. String Slicing

```
text = "PythonProgramming"
print(text[0:6])
print(text[-6:])
```

3. String Length

```
s = "Artificial Intelligence"
print(len(s))
```

4. Change Case

```
s = "learning Python"
print(s.upper())
print(s.lower())
print(s.title())
```

5. Check Palindrome

```
s = "madam"
if s == s[::-1]:
    print("Palindrome")
else:
    print("Not a Palindrome")
```

6. Count Character Frequency

```
s = "banana"
char_count = s.count('a')
print("Count of 'a':", char_count)
```

7. String Formatting

```
name = "Deepak"
age = 25
print(f"My name is {name} and I am {age} years old.")
```

8. Replace Substring

```
s = "I love Java"
s = s.replace("Java", "Python")
print(s)
```

9. Check Substring

```
s = "data science"
if "data" in s:
    print("Found")
else:
    print("Not Found")
```

10. Remove Whitespace

```
s = "   AI and ML   "
print(s.strip())
```

List Examples

1. List Creation

```
fruits = ["apple", "banana", "cherry"]
print(fruits)
```

2. Access Elements

```
nums = [10, 20, 30, 40]
print(nums[1])
print(nums[-1])
```

3. List Slicing

```
data = [1, 2, 3, 4, 5, 6]
print(data[2:5])
```

4. Add Elements

```
lst = [1, 2, 3]
lst.append(4)
lst.insert(1, 9)
print(lst)
```

5. Remove Elements

```
colors = ['red', 'green', 'blue']
colors.remove('green')
del colors[0]
print(colors)
```

6. Sort and Reverse

```
numbers = [5, 3, 8, 1]
numbers.sort()
numbers.reverse()
print(numbers)
```

7. List Comprehension

```
squares = [x**2 for x in range(6)]
```

```
print(squares)
```

8. Check Membership

```
names = ["Alice", "Bob", "Charlie"]
if "Bob" in names:
    print("Found")
```

9. Nested List Access

```
matrix = [[1, 2], [3, 4]]
print(matrix[1][0])
```

10. List to String

```
words = ["join", "these", "words"]
sentence = " ".join(words)
print(sentence)
```