Assignment_Manipulating_Strings

June 2, 2025

1 Assignment: Manipulating Strings in Python

This assignment focuses on using Python string methods and concepts to work with text effectively.

1.1 Escape Characters

Escape sequences let you insert special characters inside strings:

Escape	Meaning
\'	Single quote
\"	Double quote
\\	Backslash
\n	Newline
\t	Tab
\b	Backspace
\r	Carriage return

1.2 What this assignmen covers:

• Case conversions • Escape characters • Raw strings • Indexing & slicing • Membership • isX methods • find, replace, count • Padding, justifying, centering • Whitespace trimming • Joining & splitting • Partitioning • Line splitting • Tab expansion

[1]:
```
print("Hello!\nHow are you?\nI'm fine.")
```

```
Hello!
How are you?
I'm fine.
```

[2]:
```
# Raw strings ignore escape characters:
print(r"Line1\nLine2")  # Output: Line1\nLine2
```

```
Line1\nLine2
```

[3]:
```
# Use triple quotes for multiline text:
print("""Dear Alice,
Eve's cat has been arrested.
```

```
Sincerely,
Bob""")
```

```
Dear Alice,
Eve's cat has been arrested.
Sincerely,
Bob
```

[49]:
```
# String for demo
s = "  Hello World!  "
text = "hello world"
num_string = "12345"
mixed = "abc123"
whitespace = "   \t\n"
name = "my name is simon"
fruits = "apple, banana, cherry, apple"
tabs = "hello\tworld"
```

[50]:
```
# 1. Case Conversions
print("1. Case Conversions")
print(s.capitalize())
print(text.upper())
print(text.lower())
print("Hello".swapcase())
print(text.title())
print("ßorat".casefold())
```

```
1. Case Conversions
  hello world!
HELLO WORLD
hello world
hELLO
Hello World
ssorat
```

[51]:
```
# 2. Escape Characters
print("\n2. Escape Characters")
print("Hello\nWorld")
print("Hello\tWorld")
print("I\'m happy")
```

```

2. Escape Characters
Hello
World
Hello   World
I'm happy
```

[52]:
```
# 3. Raw Strings
print("\n3. Raw Strings")
print(r"Hello\nWorld")
```

```
3. Raw Strings
Hello\nWorld
```

[53]:
```
# 4. Indexing & Slicing
print("\n4. Indexing & Slicing")
print(s[0])       # ' '
print(s[-1])      # ' '
print(s[2:7])     # 'Hello'
print(s[::-1])    # reversed
```

```
4. Indexing & Slicing


Hello
  !dlroW olleH
```

[54]:
```
# 5. Membership
print("\n5. Membership")
print("Hello" in s)
print("Bye" not in s)
```

```
5. Membership
True
True
```

[55]:
```
# 6. isX Checks
print("\n6. String Type Checks")
print("Hello".isalpha())
print(mixed.isalnum())
print(num_string.isdecimal())
print(whitespace.isspace())
print("Hello World".istitle())
print("HELLO".isupper())
print("hello".islower())
print("hello_world".isidentifier())
print("Hi!".isprintable())
```

```
6. String Type Checks
True
True
True
```

```
True
True
True
True
True
True
```

[56]:
```python
# 7. Searching & Replacing
print("\n7. Find & Replace")
print(s.strip().replace("World", "Home"))
print(fruits.replace("apple", "orange", 1))
print(fruits.count("apple"))
print(fruits.find("banana"))
print(fruits.index("cherry"))
print(fruits.rfind("apple"))
print(fruits.rindex("apple"))
```

```
7. Find & Replace
Hello Home!
orange, banana, cherry, apple
2
7
15
23
23
```

[57]:
```python
# 8. Alignment & Padding
print("\n8. Alignment & Padding")
print("Hello".center(20))
print("Hello".center(20, '='))
print("Hello".ljust(10, '-'))
print("Hello".rjust(10, '*'))
print("42".zfill(5))
```

```
8. Alignment & Padding
       Hello
=======Hello========
Hello-----
*****Hello
00042
```

[58]:
```python
# 9. Whitespace
print("\n9. Whitespace Handling")
print(s.strip())
print(s.lstrip())
print(s.rstrip())
```

```
9. Whitespace Handling
Hello World!
Hello World!
  Hello World!
```

[59]:
```
# 10. Joining & Splitting
print("\n10. Join & Split")
print(" ".join(["My", "name", "is", "Simon"]))
print(name.split())
print("MyABCnameABCisABCSimon".split("ABC"))
```

```
10. Join & Split
My name is Simon
['my', 'name', 'is', 'simon']
['My', 'name', 'is', 'Simon']
```

[60]:
```
# 11. Partitioning
print("\n11. Partitioning")
print("hello".partition("l"))
print("hello".rpartition("l"))
```

```
11. Partitioning
('he', 'l', 'lo')
('hel', 'l', 'o')
```

[61]:
```
# 12. Line Splitting
print("\n12. Line Splitting")
print("line1\nline2\nline3".splitlines())
```

```
12. Line Splitting
['line1', 'line2', 'line3']
```

[62]:
```
# 13. Expand Tabs
print("\n13. Expand Tabs")
print(tabs.expandtabs(4))
```

```
13. Expand Tabs
hello   world
```

[ ]:
```

```