

# AI Assisted Coding

## ASSIGNMENT: 8.1

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## Test-Driven Development with AI

### Task 1: Password Strength Validator

```
import re
```

```
def is_strong_password(password):
```

```
    if not isinstance(password, str):
```

```
        return False
```

```
if len(password) < 8:
```

```
    return False
```

```
if " " in password:
```

```
    return False
```

```
if not re.search(r"[A-Z]", password):
```

```
    return False
```

```
if not re.search(r"[a-z]", password):
```

```
    return False
```

```
if not re.search(r"[0-9]", password):
```

```
    return False
```

```
if not re.search(r"[!@#$%^&*(),.?\":{}|<>]", password):
```

```
    return False
```

```
return True
```

```
# AI Generated Test Cases
```

```
assert is_strong_password("Abcd@123") == True
```

```
assert is_strong_password("abcd123") == False
```

```
assert is_strong_password("ABCD@1234") == False
```

```
assert is_strong_password("Strong#Pass9") == True
```

## Task 2: Number Classification

```
def classify_number(n):
```

```
    if not isinstance(n, (int, float)):
```

```
        return "Invalid Input"
```

```
for _ in range(1):
```

```
    if n > 0:
```

```
        return "Positive"
```

```
    elif n < 0:
```

```
        return "Negative"
```

```
    else:
```

```
        return "Zero"
```

```
# AI Generated Test Cases
```

```
assert classify_number(10) == "Positive"
```

```
assert classify_number(-5) == "Negative"
```

```
assert classify_number(0) == "Zero"
```

```
assert classify_number("abc") == "Invalid Input"
```

```
assert classify_number(None) == "Invalid Input"
```

### Task 3: Anagram Checker

```
import string
```

```
def is_anagram(str1, str2):
```

```
    if not isinstance(str1, str) or not isinstance(str2, str):
```

```
        return False
```

```
    translator = str.maketrans("", "", string.punctuation)
```

```
    s1 = str1.translate(translator).replace(" ", "").lower()
```

```
    s2 = str2.translate(translator).replace(" ", "").lower()
```

```
    return sorted(s1) == sorted(s2)
```

# AI Generated Test Cases

```
assert is_anagram("listen", "silent") == True
```

```
assert is_anagram("hello", "world") == False
```

```
assert is_anagram("Dormitory", "Dirty Room") == True
```

```
assert is_anagram("", "") == True
```

```
assert is_anagram("A gentleman", "Elegant man!") == True
```

## Task 4: Inventory Class

```
class Inventory:
```

```
    def init(self):
```

```
        self.stock = {}
```

```
    def add_item(self, name, quantity):
```

```
if name in self.stock:
```

```
    self.stock[name] += quantity
```

```
else:
```

```
    self.stock[name] = quantity
```

```
def remove_item(self, name, quantity):
```

```
    if name in self.stock and self.stock[name] >= quantity:
```

```
        self.stock[name] -= quantity
```

```
    else:
```

```
        return "Insufficient stock or item not found"
```

```
def get_stock(self, name):
```

```
    return self.stock.get(name, 0)
```

# AI Generated Test Cases

```
inv = Inventory()
```

```
inv.add_item("Pen", 10)
```

```
assert inv.get_stock("Pen") == 10
```

```
inv.remove_item("Pen", 5)
```

```
assert inv.get_stock("Pen") == 5
```

```
inv.add_item("Book", 3)
```

```
assert inv.get_stock("Book") == 3
```

## Task 5: Date Validation & Formatting

```
from datetime import datetime
```



```
def validate_and_format_date(date_str):
```

```
    try:
```

```
        date_obj = datetime.strptime(date_str, "%m/%d/%Y")
```

```
        return date_obj.strftime("%Y-%m-%d")
```

```
    except:
```

```
        return "Invalid Date"
```

```
# AI Generated Test Cases
```

```
assert validate_and_format_date("10/15/2023") == "2023-10-15"
```

```
assert validate_and_format_date("02/30/2023") == "Invalid Date"
```

```
assert validate_and_format_date("01/01/2024") == "2024-01-01"
```

```
assert validate_and_format_date("13/01/2023") == "Invalid Date"
```