1.User Login Check

```
username = "admin"
password = "1234"
input_username = input("Enter username: ")
input_password = input("Enter password: ")

# Checking login
if input_username == username and input_password == password:
    print("Login Successful")
else:
    print("Invalid Credentials")
```

```
Enter username: admin
Enter password: 1234
Login Successful
```

2. Pass/Fail analyzer

```
marks = [45, 78, 90, 33, 60]

pass_count = 0
fail_count = 0
for mark in marks:
    if mark >= 50:
        pass_count += 1
    else:
        fail_count += 1

# Print results
print("Total Students:", len(marks))
print("Total Passed:", pass_count)
print("Total Failed:", fail_count)
```

```
Total Students: 5
Total Passed: 3
Total Failed: 2
```

3. Simpler Data Cleaner

```
names = [" Alice ", "bob", " CHARLIE "]

cleaned_names = []

for name in names:
    cleaned = name.strip().lower()   # Remove spaces + convert to lowercase
    cleaned_names.append(cleaned)

print("Cleaned Names:", cleaned_names)
```

```
Cleaned Names: ['alice', 'bob', 'charlie']
```

4. Message Length Analyzer

```
messages = ["Hi", "Welcome to the platform", "OK"]

for message in messages:
    length = len(message)
    print(f"Message: '{message}'")
    print("Length:", length)

    if length > 10:
        print("Status: Long message ⚠️")
    else:
        print("Status: Short message")

    print("-" * 30)
```

```
Message: 'Hi'
Length: 2
Status: Short message
```

```
------------------------------
Message: 'Welcome to the platform'
Length: 23
Status: Long message ⚠️
------------------------------
Message: 'OK'
Length: 2
Status: Short message
------------------------------
```

5. Error Message Detector

```
logs = ["INFO", "ERROR", "WARNING", "ERROR"]

error_count = 0

for log in logs:
    if log == "ERROR":
        error_count += 1

print("Total ERROR entries:", error_count)
```

```
Total ERROR entries: 2
```