Automated Testing
& Logging in Python – Basics

Study Guide

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Goals

- Understand pytest discovery and the Arrange–Act–Assert pattern.

- Learn essentials of Python logging and capturing logs in tests.

- Use reliable Selenium waits with `WebDriverWait` and `expected_conditions`.

Quick Start

- Create venv and install: `pip install pytest selenium`

- Run all tests: `pytest -v`

- Run a file: `pytest -v tests/test_login.py`

Pytest Discovery Cheat Sheet

- Files: `test_*.py` or `*_test.py`

- Functions: start with `test_`

- Classes: start with `Test` and methods start with `test_`

- Parametrize: `@pytest.mark.parametrize("x,y", [(1,2),(3,4)])`

AAA Diagram

Logging Basics

Minimal logging setup:

```
import logging

logging.basicConfig(
    level=logging.INFO,
    format="%(asctime)s [%(levelname)s] %(name)s: %(message)s"
```

```
)
logger = logging.getLogger("demo")
logger.info("Hello logs")
```

Capture logs in tests with `caplog`:

```
def greet(name):
    logger = logging.getLogger("demo")
    logger.info("Greeting %s", name)
    return f"Hello, {name}!"

def test_greet_logs(caplog):
    caplog.set_level(logging.INFO, logger="demo")
    assert greet("Ada") == "Hello, Ada!"
    assert any("Greeting Ada" in rec.getMessage() for rec in
caplog.records)
```

Selenium Waits (Reliable)

Avoid `time.sleep`. Use explicit waits:

```
from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.support.ui import WebDriverWait
from selenium.webdriver.support import expected_conditions as EC

driver = webdriver.Chrome()
driver.get("https://www.saucedemo.com/")

WebDriverWait(driver, 10).until(
    EC.visibility_of_element_located((By.ID, "user-name"))
).send_keys("standard_user")

WebDriverWait(driver, 10).until(
    EC.visibility_of_element_located((By.ID, "password"))
).send_keys("secret_sauce")

WebDriverWait(driver, 10).until(
    EC.element_to_be_clickable((By.ID, "login-button"))
).click()
```

Logging Flow Diagram

Common Fixtures Cheat Sheet
- **caplog**: capture logging records.

- **tmp_path**: temp directory per test.

- **monkeypatch**: override env/attributes for isolation.

- **capsys**: capture stdout/stderr.