目标：为微服务 checkout 编写系统测试计划与脚本。

```
pip install flask pytest requests

from flask import Flask, request, jsonify

app = Flask(__name__)

@app.route("/checkout", methods=["POST"])
def checkout():
    data = request.get_json()
    items = data.get("items", [])
    if not items: return jsonify({"error": "empty cart"}), 400
    total = sum(i["price"] * i["quantity"] for i in items)
    return jsonify({"total": total, "status": "ok"}), 200
```

```python
import requests, multiprocessing, time

from app.checkout_service import app

def run_server():

    app.run(port=5000)

def test_checkout_total():

    p = multiprocessing.Process(target=run_server)

    p.start(); time.sleep(1)

    data = {"items": [{"price": 20, "quantity": 3}]}

    res = requests.post("http://127.0.0.1:5000/checkout", json=data)

    assert res.status_code == 200

    assert res.json()["total"] == 60

    p.terminate()

pytest --html=report.html --self-contained-html
```

GitHub Actions 持续集成:

```yaml
name: Python Test

on: [push]

jobs:
  test:
    runs-on: ubuntu-latest
    steps:
      - uses: actions/checkout@v4
      - uses: actions/setup-python@v5
        with: {python-version: "3.11"}
      - run: pip install -r requirements.txt
      - run: pytest --html=report.html --self-contained-html
```