Part 4: Continuous Integration

Task 1: Set up Test Automation in CI/CD

1. **Set up the CI/CD Environment**:
2. **Create a Test Job in Jenkins or a Workflow in GitHub Actions**:
    - **Jenkins**:
        - Create a new **Jenkins job** for your project (e.g., a **Freestyle** or **Pipeline** job).
        - Set the **Git repository URL** as the source for your code.
        - Add build steps to install dependencies and execute the Selenium scripts.
    - **GitHub Actions**:
        - Create a .github/workflows/selenium.yml file that defines your CI workflow.
3. **Install Required Dependencies in the CI/CD Pipeline**:
    - For Python-based Selenium scripts, you need to install the required packages and WebDriver binaries.
    - Example Jenkins Pipeline or **GitHub Actions** YAML to install dependencies:
        - **GitHub Actions** YAML example:

```
name: Selenium Tests

on: [push, pull_request]

jobs:
  test:
    runs-on: ubuntu-latest

    steps:
      - name: Checkout code
        uses: actions/checkout@v2

      - name: Set up Python
        uses: actions/setup-python@v2
        with:
          python-version: '3.x'

      - name: Install dependencies
        run: |
          pip install -r requirements.txt
```

```
        wget
https://chromedriver.storage.googleapis.com/92.0.4515.107/chromedriver_linux64.z
ip
        unzip chromedriver_linux64.zip
        sudo mv chromedriver /usr/local/bin/
        sudo chmod +x /usr/local/bin/chromedriver

    - name: Run Selenium tests
      run: |
        python -m pytest --maxfail=1 --disable-warnings
```

4. **Execute the Selenium Tests**:

   Example Jenkins pipeline script to run Python Selenium tests:

```
pipeline {
    agent any
    stages {
        stage('Checkout') {
            steps {
                git 'https://github.com/your-repo/selenium-tests.git'
            }
        }
        stage('Install Dependencies') {
            steps {
                sh 'pip install -r requirements.txt'
                sh 'wget
https://chromedriver.storage.googleapis.com/92.0.4515.107/chromedriver_linux64.z
ip'
                sh 'unzip chromedriver_linux64.zip'
                sh 'sudo mv chromedriver /usr/local/bin/'
                sh 'sudo chmod +x /usr/local/bin/chromedriver'
            }
        }
        stage('Run Tests') {
            steps {
                sh 'python -m pytest --maxfail=1 --disable-warnings'
            }
        }
    }
    post {
        always {
            junit 'test-reports/*.xml'
        }
```

```
    }
}
```