Lab: Setting Up Selenium Development on Your Local Ubuntu Machine

## Objective

Set up your Ubuntu computer to run automation tests using Python and Selenium, and prepare the project to upload to GitHub.

## Overview: What Are We Doing and Why?

We will:

1. Install Python, Selenium, and PyCharm on your Ubuntu machine.

2. Create a simple Selenium test that opens the AWS website and takes a screenshot.

3. Organize the project in a structure ready for GitHub.

4. Upload the project to a GitHub repository.

This setup lets you run automation tests locally and share your work on GitHub.

## Prerequisites

Before starting, make sure:

- You’re using an Ubuntu machine (any recent version, like 20.04 or 22.04 LTS).

- You have basic knowledge of Python and Selenium.

- You know how to use the terminal in Ubuntu.

- You have a GitHub account and `git` installed (we’ll install it if you don’t).

- You’ve completed a Python Selenium course (or understand Selenium basics).

## Step 1: Install Required Tools

Let’s set up everything you need on your Ubuntu machine.

### Update Your System

Open the terminal (press `Ctrl + Alt + T`) and update your system:

```bash

sudo apt update

sudo apt upgrade -y

```

### Install Python and Pip

Ubuntu usually comes with Python, but let’s ensure you have `pip` (Python’s package manager):

```bash

sudo apt install python3-pip -y

```

Check Python and pip versions:

```bash

python3 --version

pip3 --version

```

### Install Selenium

Install the Selenium package for Python:

```bash

pip3 install selenium

```

### Install Google Chrome

Selenium needs a browser. Let’s install Google Chrome:

```bash

wget https://dl.google.com/linux/direct/google-chrome-stable\_current\_amd64.deb

sudo apt install ./google-chrome-stable\_current\_amd64.deb

```

### Install Chromedriver

Chromedriver lets Selenium control Chrome. Install it:

```bash

sudo apt install chromium-chromedriver -y

```

Check Chromedriver installation:

```bash

chromedriver --version

```

### Install PyCharm

PyCharm is a great editor for Python. Install the Community Edition:

```bash

sudo snap install pycharm-community --classic

```

### Install Git

To upload to GitHub, you need `git`:

```bash

sudo apt install git -y

```

Configure Git with your name and email:

```bash

git config --global user.name "Your Name"

git config --global user.email "your.email@example.com"

```

## Step 2: Set Up the Project Structure

Let’s create a project folder with a structure that’s clear and GitHub-friendly.

1. Create a project directory:

```bash

mkdir selenium-aws-test

cd selenium-aws-test

```

2. Create the following structure:

```

selenium-aws-test/

├── tests/

│ └── test\_aws.py

├── screenshots/

├── README.md

├── requirements.txt

└── .gitignore

```

Run these commands to set it up:

```bash

mkdir tests screenshots

touch tests/test\_aws.py README.md requirements.txt .gitignore

```

### Populate the Files

- \*\*requirements.txt\*\*: Lists project dependencies.

```bash

echo "selenium==4.17.2" > requirements.txt

```

- \*\*.gitignore\*\*: Ignores unnecessary files for GitHub.

```bash

echo "screenshots/\*.png

\_\_pycache\_\_/

\*.pyc

.idea/

\*.log" > .gitignore

```

- \*\*README.md\*\*: Explains your project.

```bash

echo "# Selenium AWS Test

A simple Selenium project to open the AWS website and take a screenshot.

## Setup

1. Install dependencies: \`pip install -r requirements.txt\`

2. Ensure Google Chrome and Chromedriver are installed.

3. Run the test: \`python3 tests/test\_aws.py\`

## Structure

- \`tests/\`: Test scripts

- \`screenshots/\`: Saved screenshots

- \`requirements.txt\`: Python dependencies

- \`.gitignore\`: Ignored files for Git" > README.md

```

## Step 3: Write and Run a Selenium Test

Let’s create a test script that opens the AWS website and takes a screenshot.

Edit `tests/test\_aws.py` using PyCharm or a text editor like `nano`:

```bash

nano tests/test\_aws.py

```

Paste this code:

```python

from selenium import webdriver

from selenium.webdriver.chrome.service import Service

from webdriver\_manager.chrome import ChromeDriverManager

import time

# Set up Chrome driver

service = Service(ChromeDriverManager().install())

driver = webdriver.Chrome(service=service)

# Open AWS website

driver.get("https://aws.amazon.com/")

# Take a screenshot

driver.save\_screenshot("screenshots/aws\_website.png")

# Wait for 10 seconds to see the page

time.sleep(10)

# Close the browser

driver.quit()

```

Save and exit (`Ctrl + X`, then `Y`, then `Enter` if using `nano`).

### Install Webdriver Manager

The script uses `webdriver\_manager` to handle Chromedriver automatically. Install it:

```bash

pip3 install webdriver-manager

```

### Run the Test

Run the test from the terminal:

```bash

python3 tests/test\_aws.py

```

What happens:

- A Chrome browser opens.

- It visits `https://aws.amazon.com/`.

- It saves a screenshot in the `screenshots/` folder as `aws\_website.png`.

- The browser waits 10 seconds, then closes.

Check the `screenshots/` folder to see `aws\_website.png`.

## Step 4: Upload to GitHub

Let’s push your project to GitHub.

1. \*\*Create a GitHub Repository\*\*:

- Go to [GitHub](https://github.com) and sign in.

- Click “New” to create a repository.

- Name it `selenium-aws-test`.

- Choose “Public” or “Private” as you prefer.

- Don’t add a README or .gitignore (we already made them).

- Click “Create repository”.

2. \*\*Initialize Git and Push\*\*:

In your terminal, inside the `selenium-aws-test` folder:

```bash

git init

git add .

git commit -m "Initial commit: Selenium AWS test project"

git branch -M main

git remote add origin https://github.com/your-username/selenium-aws-test.git

git push -u origin main

```

Replace `your-username` with your GitHub username. You may need to authenticate with your GitHub credentials.

## Final Result

You now have:

- Python, Selenium, Chrome, Chromedriver, and PyCharm installed on your Ubuntu machine.

- A Selenium test that opens the AWS website and saves a screenshot.

- A clean project structure in `selenium-aws-test/`.

- Your project uploaded to GitHub for sharing or collaboration.

## Troubleshooting

- \*\*Chromedriver issues\*\*: Ensure `chromedriver` is in your system’s PATH (`/usr/lib/chromium-browser/chromedriver`). If not, specify the path in the script:

```python

service = Service("/usr/lib/chromium-browser/chromedriver")

```

- \*\*Browser not opening\*\*: Check Chrome and Chromedriver versions match. Update them with:

```bash

sudo apt update

sudo apt install google-chrome-stable chromium-chromedriver

```

- \*\*Git push fails\*\*: Ensure you’re authenticated with GitHub. Try generating a Personal Access Token if prompted.

Happy automating!