NORTHWESTERN POLYTECHNIC
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Online Jukebox + DOS attack using Selenium JUnit/WebDriver + Python Web Server

Prepared For:

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Online Jukebox Code

- Jukebox code is available in my Github link -
  - https://github.com/santhinagalla/Software-Quality-Assurance-and-Test Automation/tree/main/Jukebox

Steps to run Code

- Make sure the mysql server up and running
- And start python3 server using below command.

  python3 -m http.server 8000 --bind 127.0.0.1 --cgi 8000
- Save and change the mode of the Files using command ,for Ex - chmod 755 dos.sh
- Go to https://www.google.com/recaptcha/admin/create to create a reCAPTCHA to prevent the attack.
- Copy the client-side key and use in index.html.
- Copy the Server-side key and use in songlist.py.

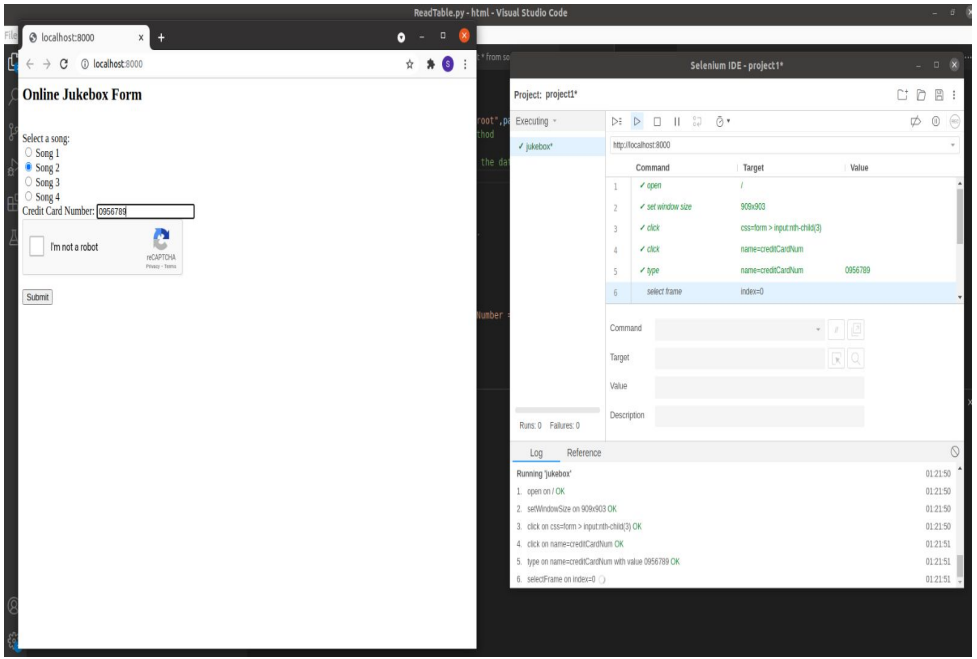
Online Jukebox form

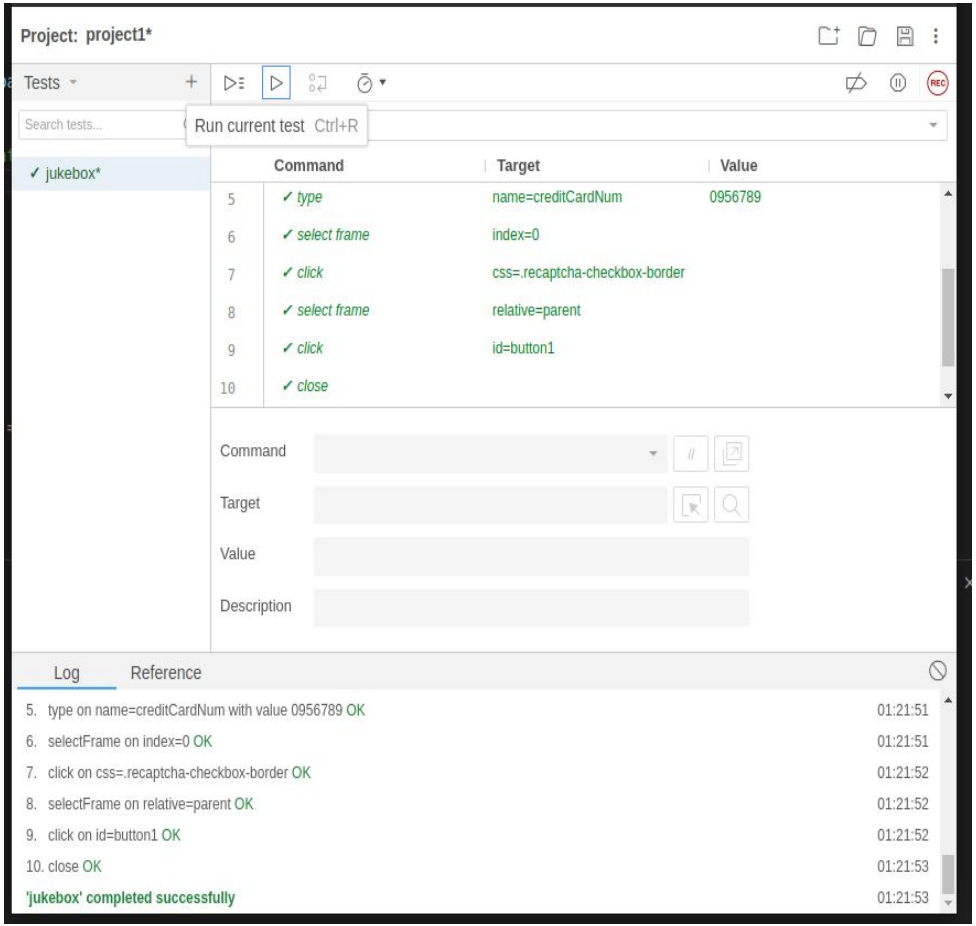
- Launch the browser and Open http://localhost:8000/ to see Online Jukebox form.

The browser looks like below -

DOS attack using Selenium IDE

- Open IDE and record the steps by using the Base URL - **http://localhost:8000/** to test Online Jukebox form.
- Select song and enter credit card number then select the simple captcha checkbox then click on submit button.
- Once you are done the recording, stop the recording and playback and check whether the test case running successfully.






```
sans@sans-vb:~/Desktop/html$ python3 ReadTable.py
songName = song1, Credit Card Number = 123456789
songName = song2, Credit Card Number = 987654321
```

```
songName = song2, Credit Card Number = 0956789
songName = song2, Credit Card Number = 0956789
songName = song2, Credit Card Number = 0956789
```

DOS attack using Selenium Webdriver

- Write test cases using “Selenium JUnit/WebDriver" to access the Jukebox form or export the code in “Java JUnit” using Selenium IDE.

```
import org.junit.Test;
import org.junit.Before;
import org.junit.After;
//import static org.junit.Assert.*;
//import static org.hamcrest.CoreMatchers.is;
//import static org.hamcrest.core.IsNot.not;
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.openqa.selenium.chrome.ChromeDriverService;
import org.openqa.selenium.remote.RemoteWebDriver;
import org.openqa.selenium.remote.DesiredCapabilities;
import org.openqa.selenium.Dimension;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.interactions.Actions;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;
import org.openqa.selenium.JavascriptExecutor;
import org.openqa.selenium.Alert;
import org.openqa.selenium.Keys;
import java.util.*;
import java.net.MalformedURLException;
import java.net.URL;
public class Jukeboxselenium {
  private WebDriver driver;
  private Map<String, Object> vars;
  JavascriptExecutor js;
  @Before
  public void setUp() {
    System.setProperty(ChromeDriverService.CHROME_DRIVER_EXE_PROPERTY, "/home/sans/Downloads/jar/chromedriver");
    driver = new ChromeDriver();
    js = (JavascriptExecutor) driver;
    vars = new HashMap<String, Object>();
  }
  @After
  public void tearDown() {
    driver.quit();
  }
  @Test
  public void test1() {
          try{
            driver.get("http://localhost:8000/");
            driver.manage().window().setSize(new Dimension(909, 903));
            driver.findElement(By.name("song")).click();
            driver.findElement(By.name("creditCardNum")).click();
            driver.findElement(By.name("creditCardNum")).sendKeys("111111123");
```

Run webdriver code from command line

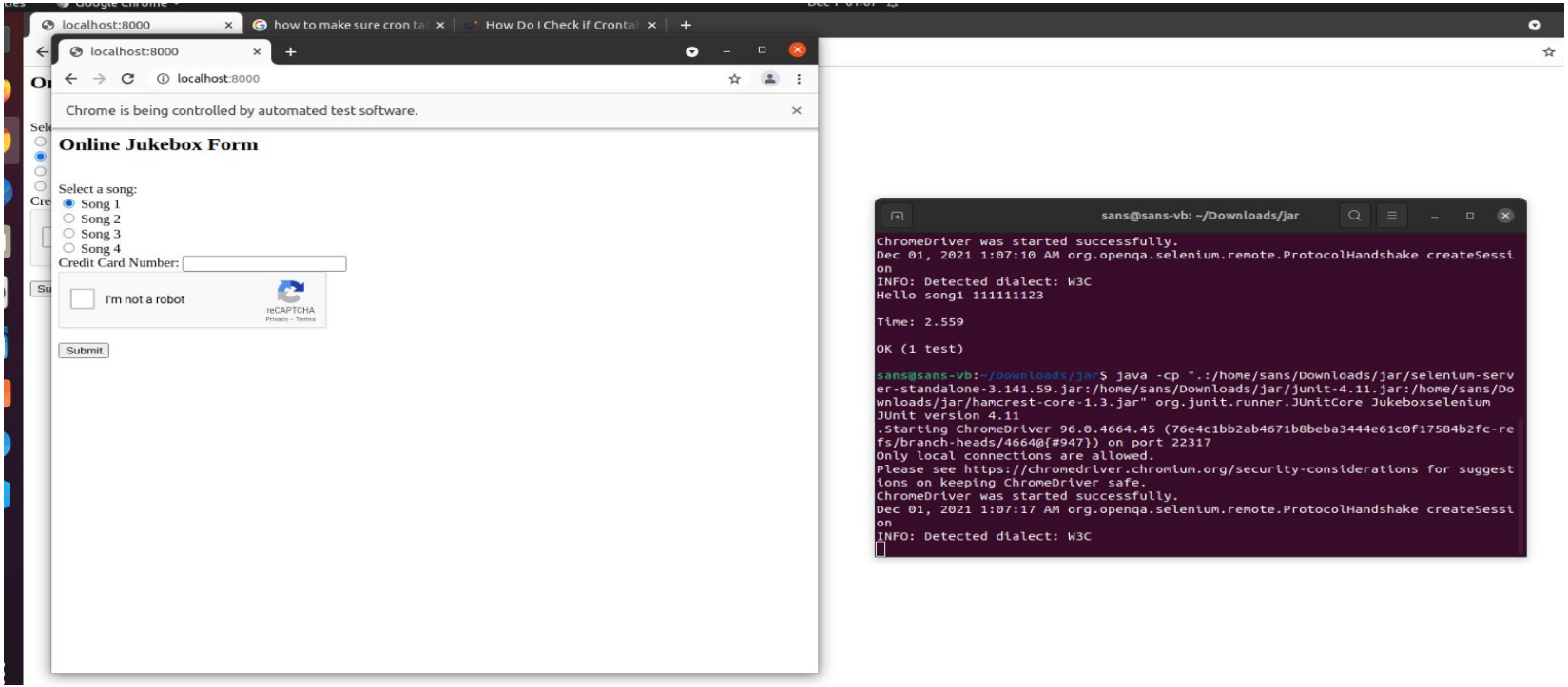
- To run the above code in command line need below Jar files.
- Download the Jar files before execute the code in command line.
    - **Selenium Standalone server** - **https://selenium-release.storage.googleapis.com/index.html?path=3.141/selenium-server- standalone-3.141.59.jar**
    - **Chrome Driver** - **https://chromedriver.chromium.org/downloads**
    - **junit-4.11 - http://www.java2s.com/Code/Jar/j/Downloadjunit411jar.htm**
    - **hamcrest-core-1.3 - http://www.java2s.com/Code/Jar/h/Downloadhamcrestcore13jar.htm**

Run webdriver code from command line

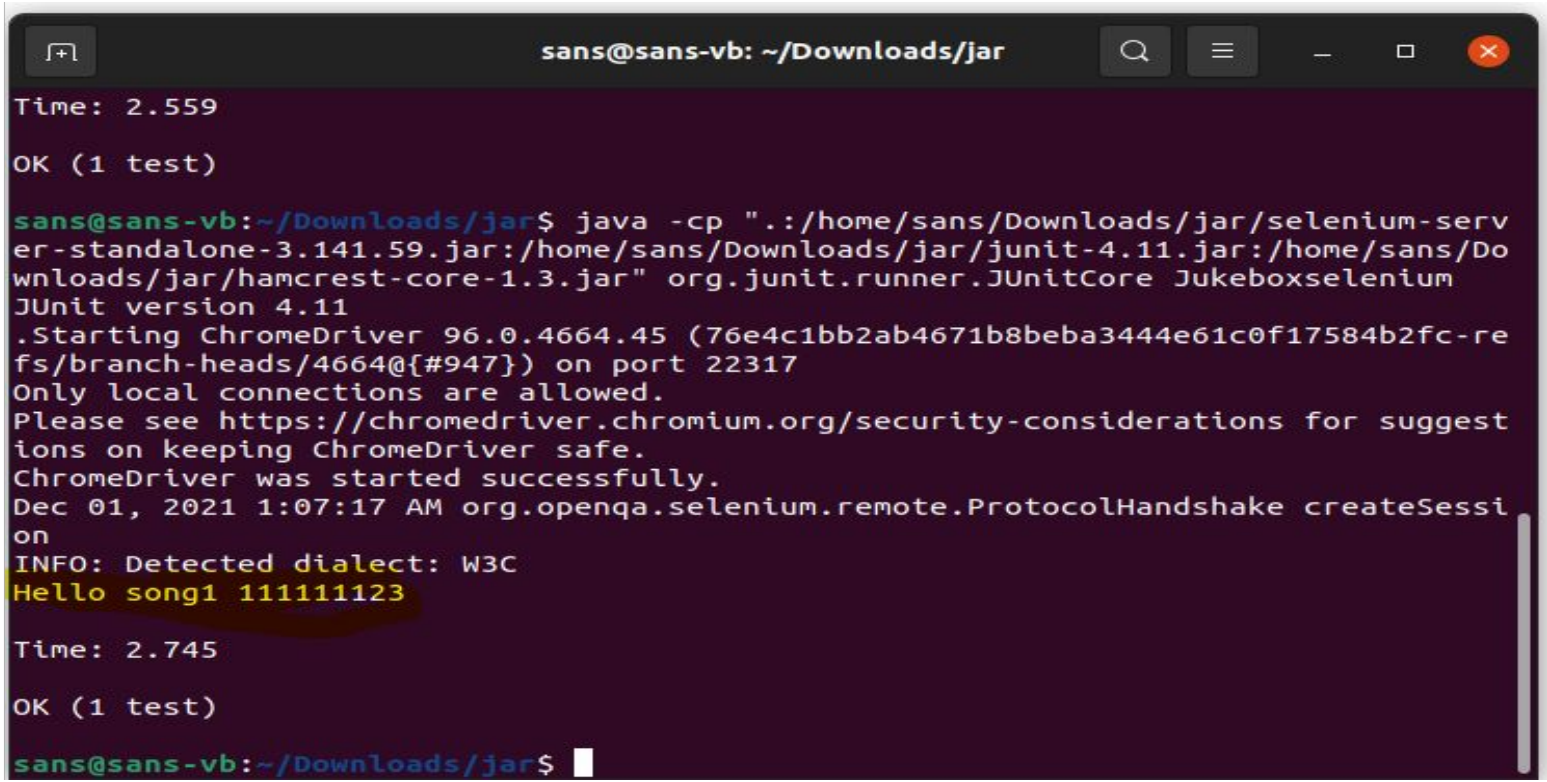
- Compile the jukebox code using below commands with jar files.
- .class file will be generated.
  - **javac -cp ".:/home/sans/Downloads/jar/selenium-server-standalone-3.141.59.jar:/home/sans/Downloads/jar/junit-4.11.jar:/home/sans/Downloads/jar/hamcrest-core-1.3.jar" -d . Jukeboxselenium.java**
- Now run the .class file using below command.
  - **java -cp ".:/home/sans/Downloads/jar/selenium-server-standalone-3.141.59.jar:/home/sans/Downloads/jar/junit-4.11.jar:/home/sans/Downloads/jar/hamcrest-core-1.3.jar" org.junit.runner.JUnitCore Jukeboxselenium**

Run webdriver code from command line

- After running the above commands browser will launch and execute the steps.



Output


sans@sans-vb: ~/Downloads/jar
Time: 2.559
OK (1 test)
sans@sans-vb:~/Downloads/jar$ java -cp ".:/home/sans/Downloads/jar/selenium-server-standalone-3.141.59.jar:/home/sans/Downloads/jar/junit-4.11.jar:/home/sans/Downloads/jar/hamcrest-core-1.3.jar" org.junit.runner.JUnitCore Jukeboxselenium
JUnit version 4.11
.Starting ChromeDriver 96.0.4664.45 (76e4c1bb2ab4671b8beba3444e61c0f17584b2fc-refs/branch-heads/4664@{#947}) on port 22317
Only local connections are allowed.
Please see https://chromedriver.chromium.org/security-considerations for suggestions on keeping ChromeDriver safe.
ChromeDriver was started successfully.
Dec 01, 2021 1:07:17 AM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Hello song1 111111123
Time: 2.745
OK (1 test)
sans@sans-vb:~/Downloads/jar$

Shell script

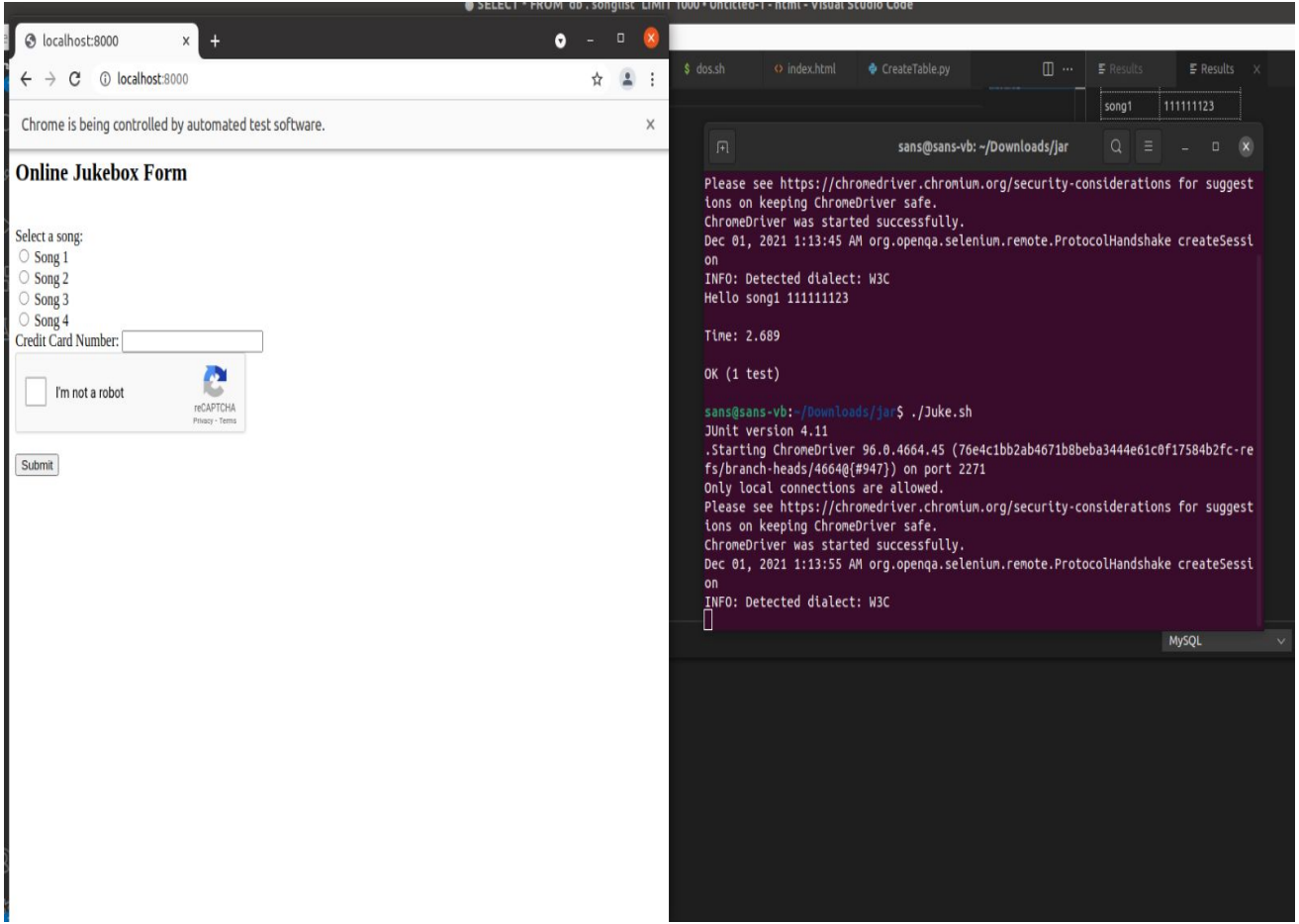
- Write a shell script to invoke your java program with the necessary arguments : Ex- Juke.sh

```
#!/bin/bash
echo "Running script."
cd /home/sans/Downloads/jar
#javac -cp
".:/home/sans/Downloads/jar/selenium-server-standalone-3.141.59.jar:/home/sans/Do
wnloads/jar/junit-4.11.jar:/home/sans/Downloads/jar/hamcrest-core-1.3.jar" -d .
Jukeboxselenium.java
java -cp
.:/home/sans/Downloads/jar/selenium-server-standalone-3.141.59.jar:/home/sans/Dow
nloads/jar/junit-4.11.jar:/home/sans/Downloads/jar/hamcrest-core-1.3.jar
org.junit.runner.JUnitCore Jukeboxselenium
```

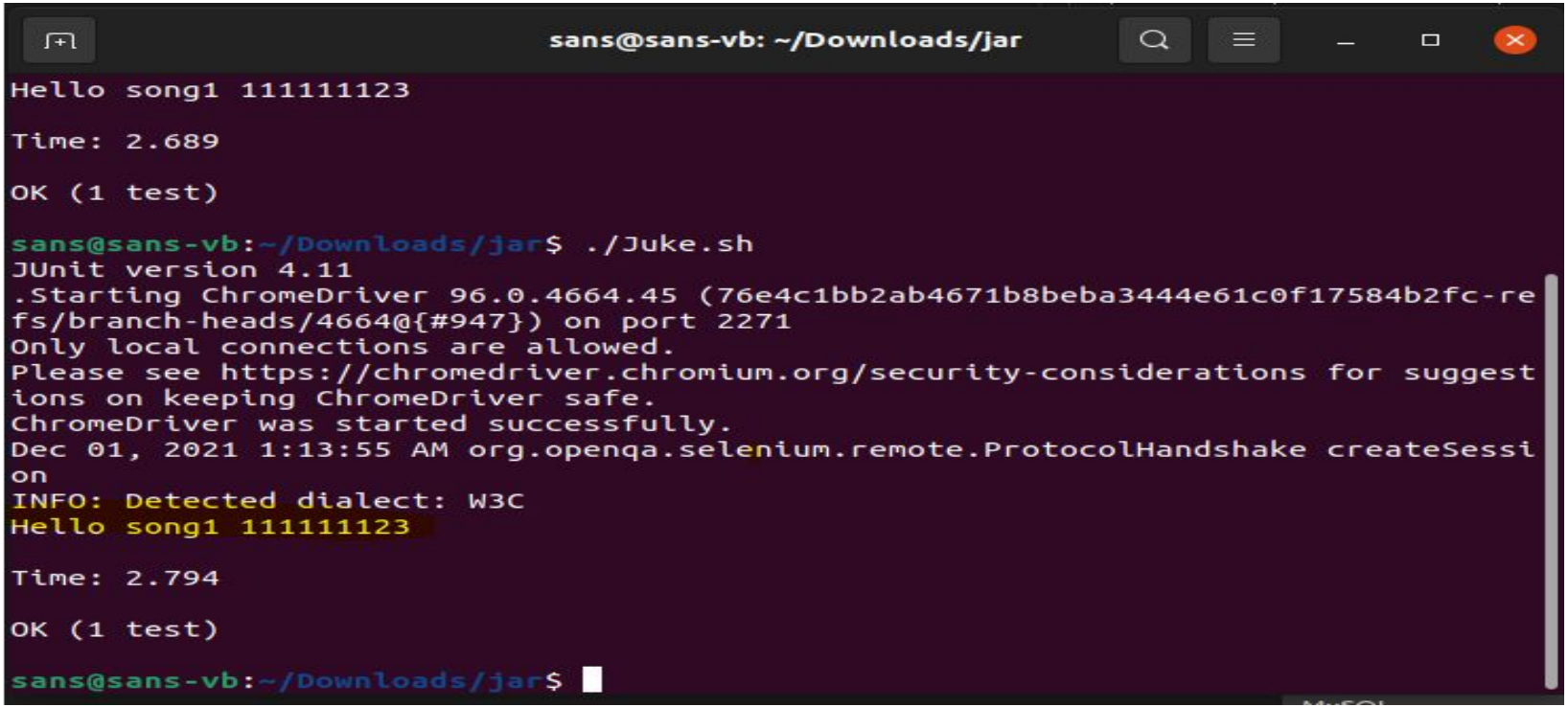
Run the Shell script

on command line

./Juke.sh



Output - Shell script



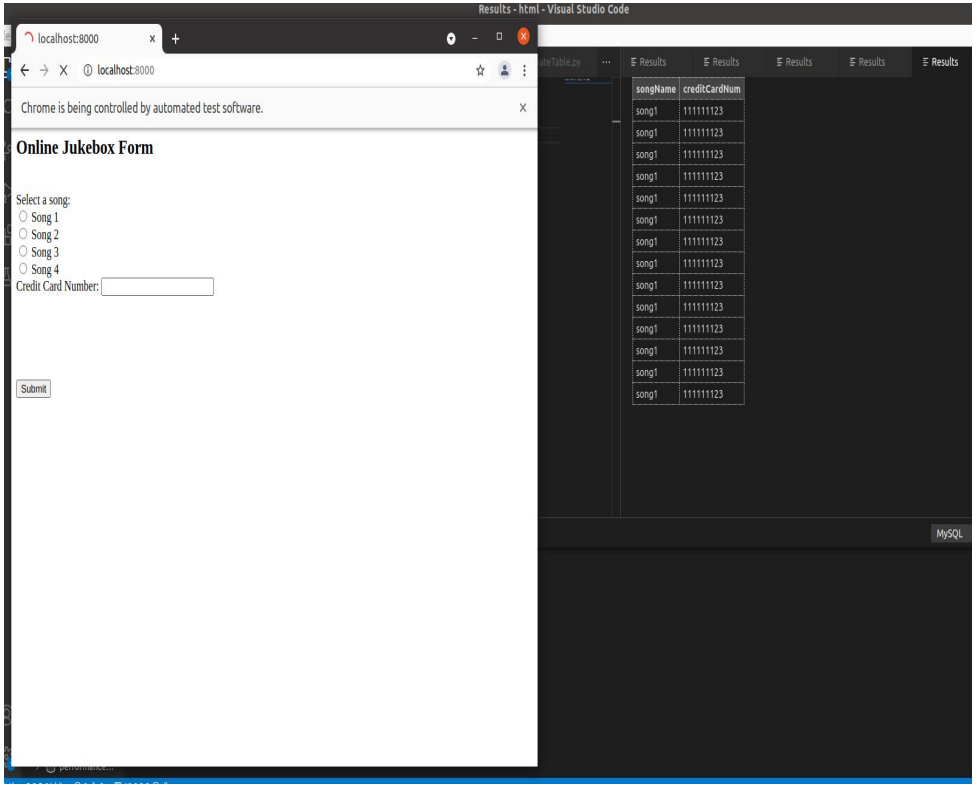
Cron Job

- Schedule the script to be invoked by setting up a cron job.
- Run from a terminal: **crontab –e**
- This will open your crontab editor. You can add a job in this way:

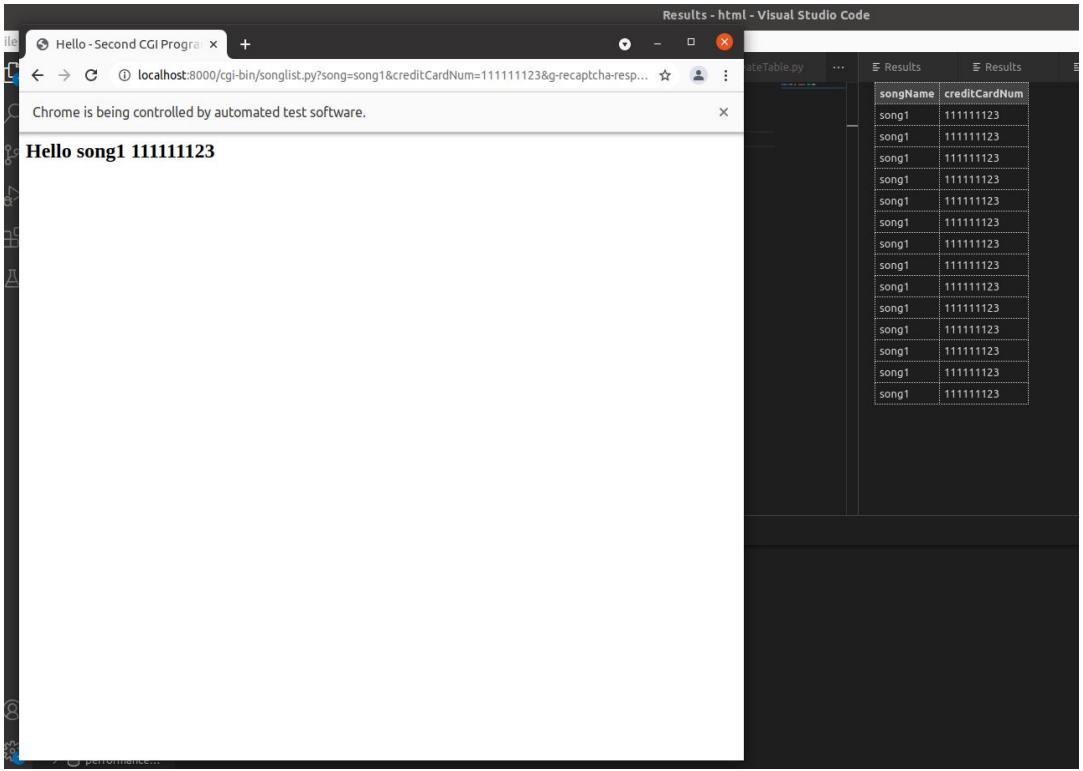
MAILTO="santhi@gmail.com"

***/5 * * * * bash /home/sans/Downloads/jar/Juke.sh**

- This job is set to run every 5 minutes.



Cron Job Mail Notice



Cron <sans@sans-vb> bash /home/sans/Downloads/jar/Juke.sh Inbox ×

root <sans.nagalla@gmail.com>
to me

Running script.
JUnit version 4.11
.Dec 01, 2021 11:18:02 PM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
Hello song1 111111123

Time: 4.899

OK (1 test)

```
sans@sans-vb:~$ crontab -r
sans@sans-vb:~$ crontab -l
no crontab for sans
sans@sans-vb:~$
```

References

- Github Link - https://github.com/santhinagalla/Software-Quality-Assurance-and-Test-Automation/tree/main/QA/Selenium%20JUnit(WebDriver%20%2B%20Python%20Web%20Server%20%2B%20Cron%20Job)/JukeBox
- https://npu85.npu.edu/~henry/npu/classes/shell_script/backup/slide/cron.html
- https://unix.stackexchange.com/questions/98914/how-to-use-crontab-for-a-java-file-in-linux
- https://stackoverflow.com/questions/7855666/cron-job-for-a-java-program
- https://www.browserstack.com/guide/selenium-webdriver-tutorial