CS6474: Software Testing Laboratory
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Contents

1 Selenium

Selenium is a free (open-source) automated testing framework used to validate web applications across different browsers and platforms. You can use multiple programming languages like Java, C#, Python, etc to create Selenium Test Scripts. Testing done using the Selenium testing tool is usually referred to as Selenium Testing.

Selenium Tool Suite

Selenium Software is not just a single tool but a suite of software, each piece catering to different Selenium QA testing needs of an organization. Here is the list of tools

- Selenium Integrated Development Environment (IDE)
- Selenium Remote Control (RC)
- WebDriver
- Selenium Grid

2 IRCTC

Selenium IDE Screenshot IRCTC website.

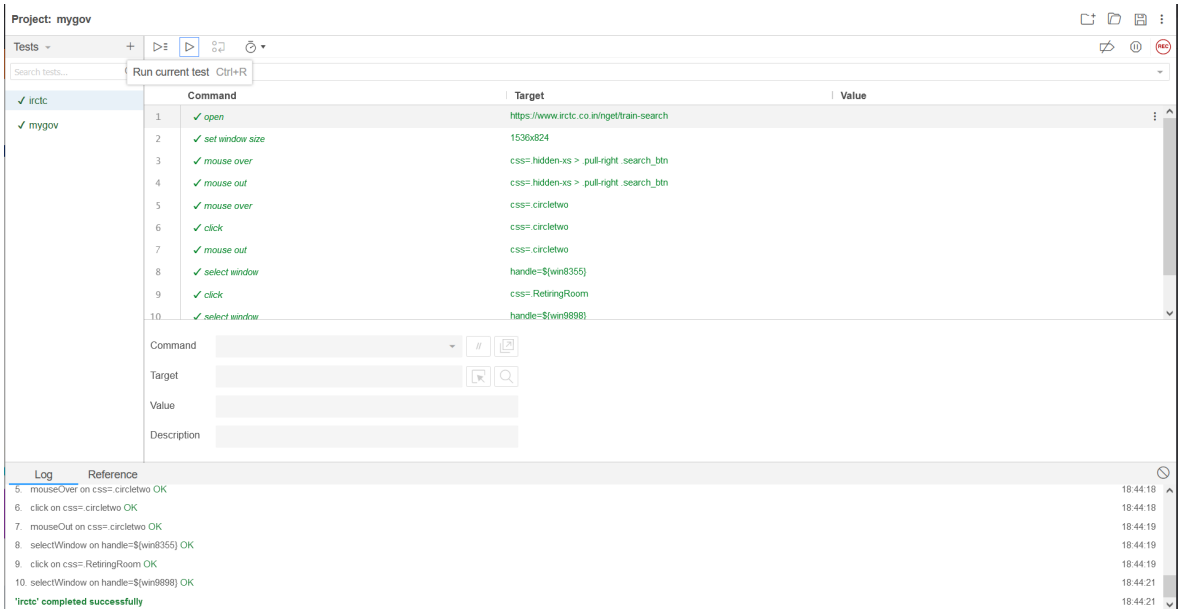

Figure 1: IRCTC Website

2.1 IRCTC pytest code

```
1 # Generated by Selenium IDE
2 import pytest
3 import time
4 import json
```

```
from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.common.action_chains import ActionChains
from selenium.webdriver.support import expected_conditions
from selenium.webdriver.support.wait import WebDriverWait
from selenium.webdriver.common.keys import Keys
from selenium.webdriver.common.desired_capabilities import
   DesiredCapabilities

class TestIrctc():
  def setup_method(self, method):
    self.driver = webdriver.Firefox()
    self.vars = {}

  def teardown_method(self, method):
    self.driver.quit()

  def wait_for_window(self, timeout = 2):
    time.sleep(round(timeout / 1000))
    wh_now = self.driver.window_handles
    wh_then = self.vars["window_handles"]
    if len(wh_now) > len(wh_then):
      return set(wh_now).difference(set(wh_then)).pop()

  def test_irctc(self):
    self.driver.get("https://www.irctc.co.in/nget/train-search")
    self.driver.set_window_size(1536, 824)
    element = self.driver.find_element(By.CSS_SELECTOR, ".hidden-
       xs > .pull-right .search_btn")
    actions = ActionChains(self.driver)
    actions.move_to_element(element).perform()
    element = self.driver.find_element(By.CSS_SELECTOR, "body")
    actions = ActionChains(self.driver)
    actions.move_to_element(element, 0, 0).perform()
    element = self.driver.find_element(By.CSS_SELECTOR, ".
       circletwo")
    actions = ActionChains(self.driver)
    actions.move_to_element(element).perform()
    self.vars["window_handles"] = self.driver.window_handles
    self.driver.find_element(By.CSS_SELECTOR, ".circletwo").click
       ()
    self.vars["win8355"] = self.wait_for_window(2000)
    element = self.driver.find_element(By.CSS_SELECTOR, "body")
    actions = ActionChains(self.driver)
    actions.move_to_element(element, 0, 0).perform()
    self.driver.switch_to.window(self.vars["win8355"])
    self.vars["window_handles"] = self.driver.window_handles
```

```
48      self.driver.find_element(By.CSS_SELECTOR, ".RetiringRoom").
            click()
49      self.vars["win9898"] = self.wait_for_window(2000)
50      self.driver.switch_to.window(self.vars["win9898"])
```

3 MyGOV

Selenium IDE Screenshot MyGov website.

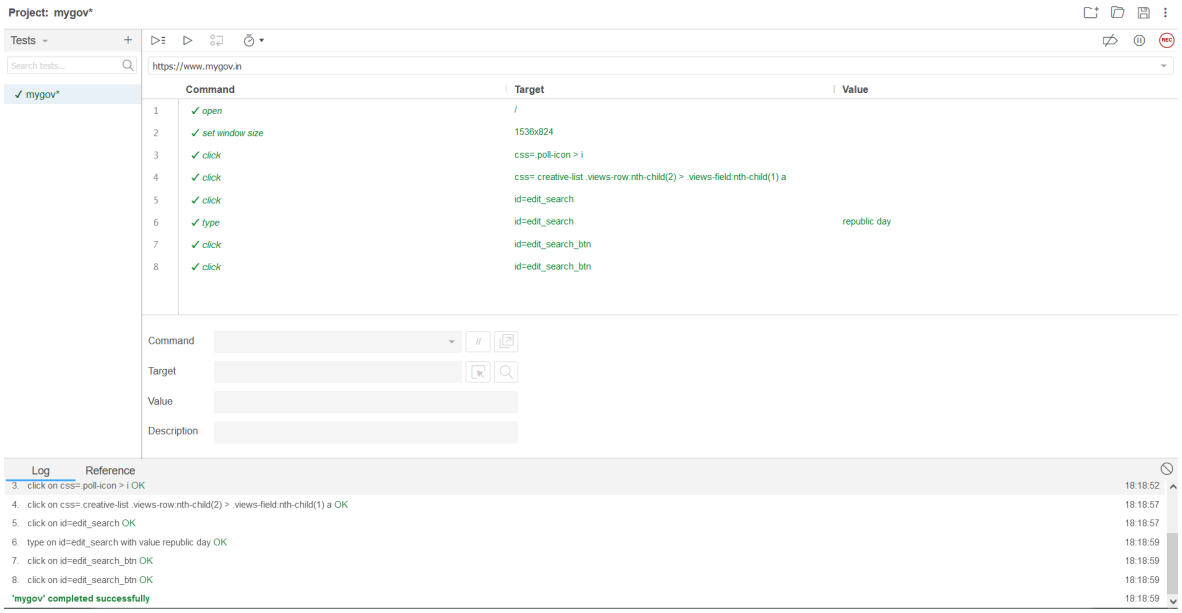

Figure 2: MyGov Website

3.1 MyGov pytest code

```
1  # Generated by Selenium IDE
2  import pytest
3  import time
4  import json
5  from selenium import webdriver
6  from selenium.webdriver.common.by import By
7  from selenium.webdriver.common.action_chains import ActionChains
8  from selenium.webdriver.support import expected_conditions
9  from selenium.webdriver.support.wait import WebDriverWait
10 from selenium.webdriver.common.keys import Keys
11 from selenium.webdriver.common.desired_capabilities import
       DesiredCapabilities
12
13 class TestMygov():
14   def setup_method(self, method):
```

```
    self.driver = webdriver.Firefox()
    self.vars = {}

  def teardown_method(self, method):
    self.driver.quit()

  def test_mygov(self):
    self.driver.get("https://www.mygov.in/")
    self.driver.set_window_size(1536, 824)
    self.driver.find_element(By.CSS_SELECTOR, ".poll-icon > i").
        click()
    self.driver.find_element(By.CSS_SELECTOR, ".creative-list .
        views-row:nth-child(2) > .views-field:nth-child(1) a").
        click()
    self.driver.find_element(By.ID, "edit_search").click()
    self.driver.find_element(By.ID, "edit_search").send_keys("
        republic day")
    self.driver.find_element(By.ID, "edit_search_btn").click()
    self.driver.find_element(By.ID, "edit_search_btn").click()
```

4 CoWin

Selenium IDE Screenshot CoWIN website.

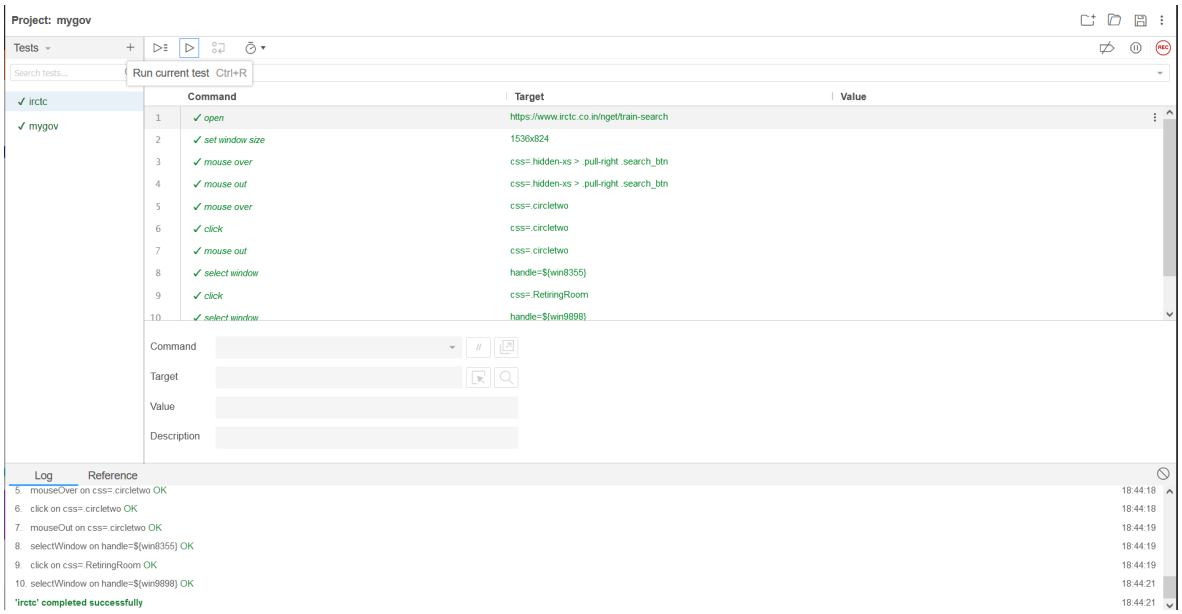

Figure 3: CoWIN Website

4.1 CoWIN pytest code

```python
# Generated by Selenium IDE
import pytest
import time
import json
from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.common.action_chains import ActionChains
from selenium.webdriver.support import expected_conditions
from selenium.webdriver.support.wait import WebDriverWait
from selenium.webdriver.common.keys import Keys
from selenium.webdriver.common.desired_capabilities import
   DesiredCapabilities

class TestCoWin():
  def setup_method(self, method):
    self.driver = webdriver.Firefox()
    self.vars = {}

  def teardown_method(self, method):
    self.driver.quit()

  def test_coWin(self):
    self.driver.get("https://www.cowin.gov.in/")
    self.driver.find_element(By.CSS_SELECTOR, ".accessibility-
       plugin-ac:nth-child(2) > .dropdwnbtn").click()
    assert self.driver.title == "CoWIN"
```

5 GFG

Selenium IDE Screenshot GFG website.

5.1 Failure

verify text failed because not able to verify the word software in the searched page.

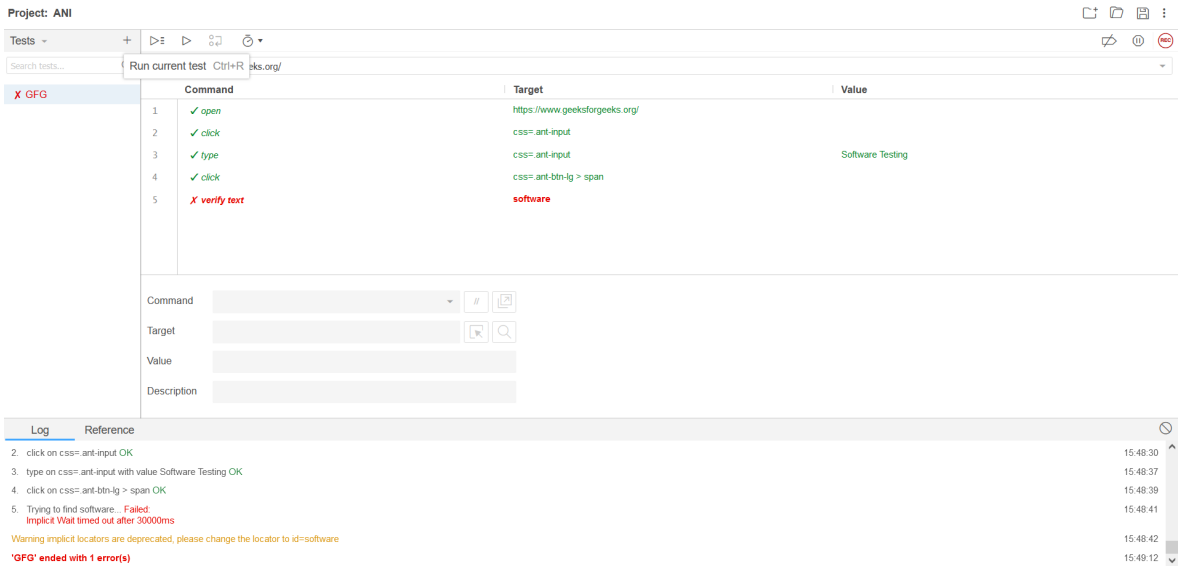

Figure 4: GFG Website

6 Sarkariresult

Selenium IDE Screenshot of sarkariresult.com website.

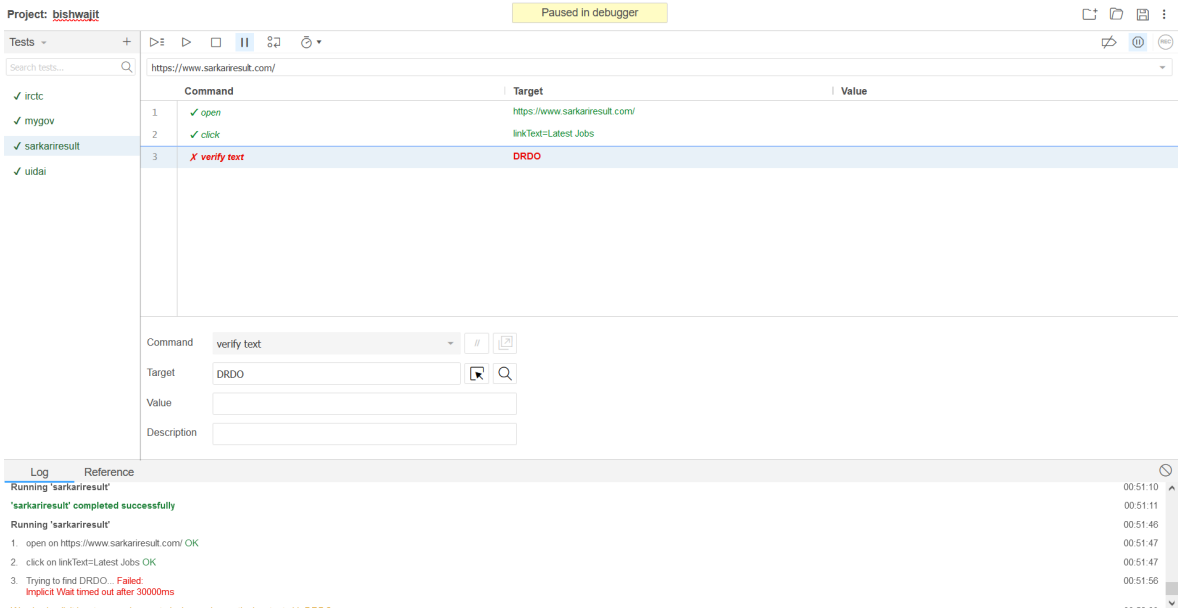

Figure 5: Sarkariresult Website

6.1 Failed Case

verify text failed because not able to verify the word "$DRDO$" in the searched page,

7 UIDAI

Selenium IDE Screenshot of website.

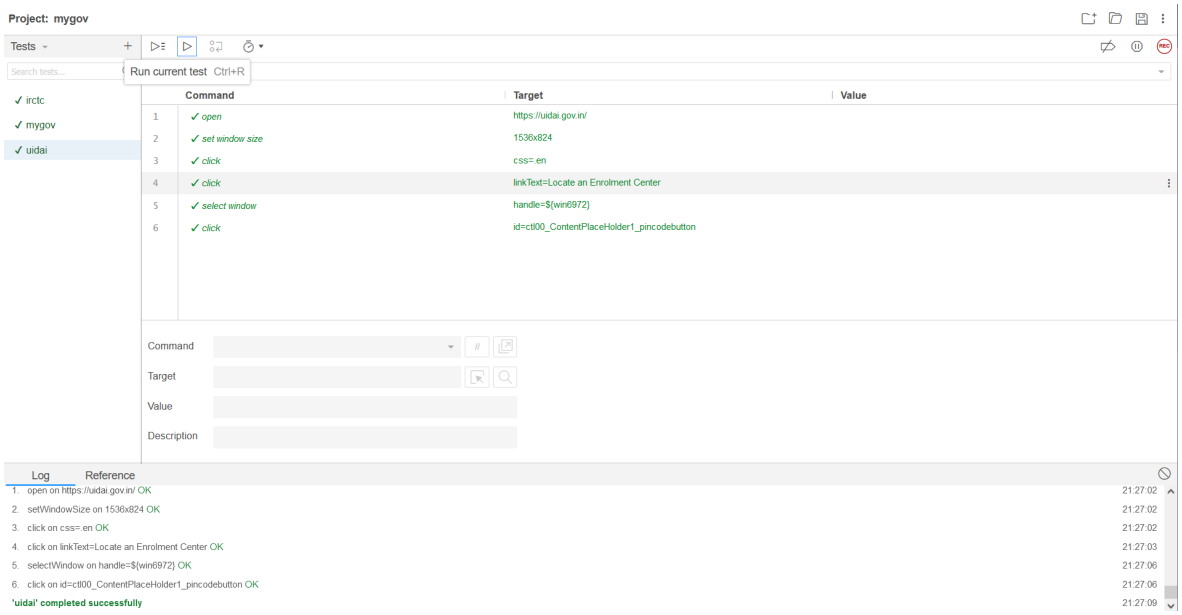

Figure 6: UIDAI Website

7.1 UIDAI pytest code

```
# Generated by Selenium IDE
import pytest
import time
import json
from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.common.action_chains import ActionChains
from selenium.webdriver.support import expected_conditions
from selenium.webdriver.support.wait import WebDriverWait
from selenium.webdriver.common.keys import Keys
from selenium.webdriver.common.desired_capabilities import
   DesiredCapabilities

class TestUidai():
  def setup_method(self, method):
    self.driver = webdriver.Firefox()
    self.vars = {}

  def teardown_method(self, method):
    self.driver.quit()

  def wait_for_window(self, timeout = 2):
```

```
    time.sleep(round(timeout / 1000))
    wh_now = self.driver.window_handles
    wh_then = self.vars["window_handles"]
    if len(wh_now) > len(wh_then):
      return set(wh_now).difference(set(wh_then)).pop()

  def test_uidai(self):
    self.driver.get("https://uidai.gov.in/")
    self.driver.set_window_size(1536, 824)
    self.driver.find_element(By.CSS_SELECTOR, ".en").click()
    self.vars["window_handles"] = self.driver.window_handles
    self.driver.find_element(By.LINK_TEXT, "Locate an Enrolment
       Center").click()
    self.vars["win6972"] = self.wait_for_window(2000)
    self.driver.switch_to.window(self.vars["win6972"])
    self.driver.find_element(By.ID, "
       ctl00_ContentPlaceHolder1_pincodebutton").click()
```

8 Nasa

Selenium IDE Screenshot of Nasa website.

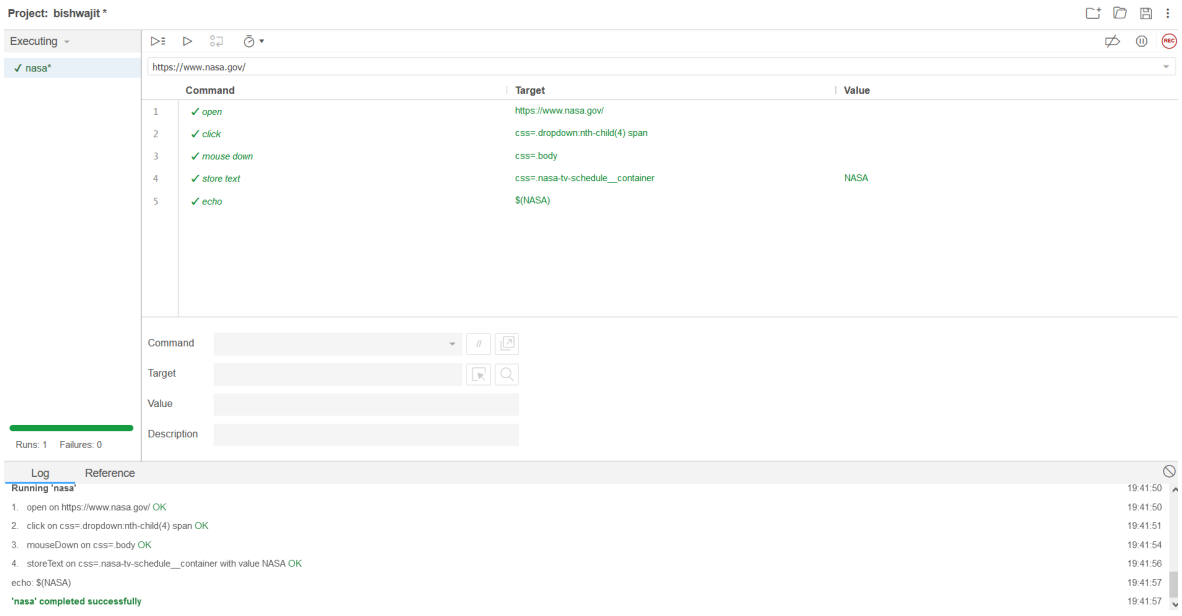

Figure 7: Nasa Website

8.1 Command Used

- echo
- store text
- mouse down

8.2 Nasa pytest code

```
# Generated by Selenium IDE
import pytest
import time
import json
from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.common.action_chains import ActionChains
from selenium.webdriver.support import expected_conditions
from selenium.webdriver.support.wait import WebDriverWait
from selenium.webdriver.common.keys import Keys
from selenium.webdriver.common.desired_capabilities import
   DesiredCapabilities

class TestNasa():
  def setup_method(self, method):
    self.driver = webdriver.Firefox()
    self.vars = {}

  def teardown_method(self, method):
    self.driver.quit()

  def test_nasa(self):
    self.driver.get("https://www.nasa.gov/")
    self.driver.find_element(By.CSS_SELECTOR, ".dropdown:nth-
       child(4) span").click()
    element = self.driver.find_element(By.CSS_SELECTOR, ".body")
    actions = ActionChains(self.driver)
    actions.move_to_element(element).click_and_hold().perform()
    self.vars["NASA"] = self.driver.find_element(By.CSS_SELECTOR,
        ".nasa-tv-schedule__container").text
    print("$(NASA)")
```

9 Tutorialspoint

Selenium IDE Screenshot tutorialspoint.com website.

9.1 tutorialsoint pytest code

```
# Generated by Selenium IDE
import pytest
import time
import json
from selenium import webdriver
```

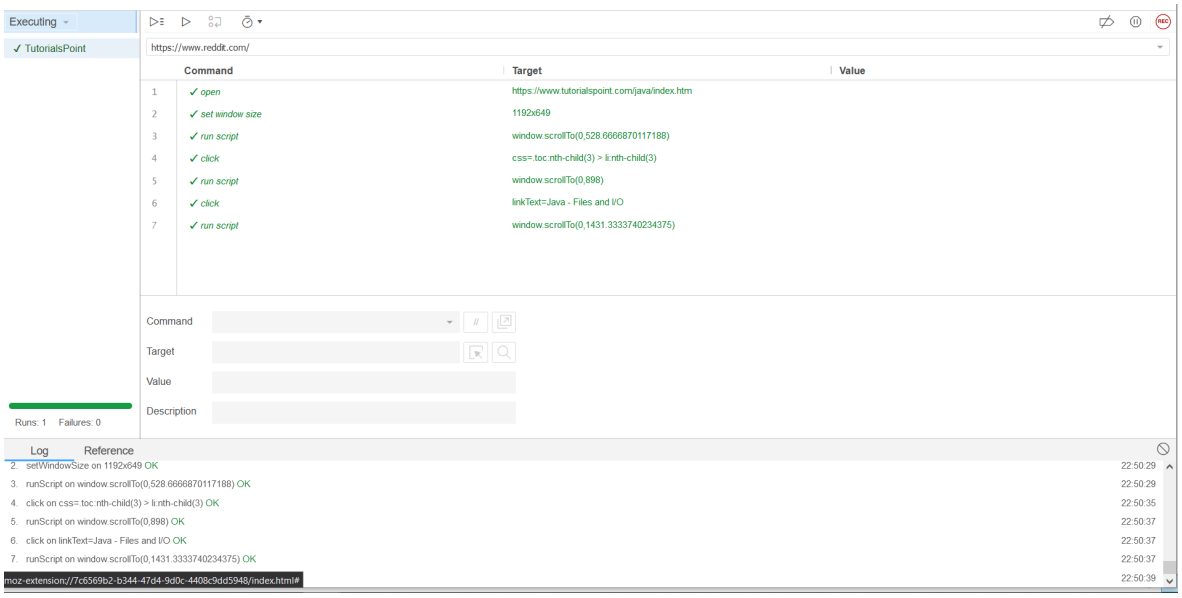

Figure 8: tutorialsoint Website

```
6  from selenium.webdriver.common.by import By
7  from selenium.webdriver.common.action_chains import ActionChains
8  from selenium.webdriver.support import expected_conditions
9  from selenium.webdriver.support.wait import WebDriverWait
10 from selenium.webdriver.common.keys import Keys
11 from selenium.webdriver.common.desired_capabilities import
       DesiredCapabilities
12
13 class TestTutorialsPoint():
14   def setup_method(self, method):
15     self.driver = webdriver.Firefox()
16     self.vars = {}
17
18   def teardown_method(self, method):
19     self.driver.quit()
20
21   def test_tutorialsPoint(self):
22     self.driver.get("https://www.tutorialspoint.com/java/index.
         htm")
23     self.driver.set_window_size(1192, 649)
24     self.driver.execute_script("window.scrollTo
         (0,528.6666870117188)")
25     self.driver.find_element(By.CSS_SELECTOR, ".toc:nth-child(3)
         > li:nth-child(3)").click()
26     self.driver.execute_script("window.scrollTo(0,898)")
27     self.driver.find_element(By.LINK_TEXT, "Java - Files and I/O"
         ).click()
28     self.driver.execute_script("window.scrollTo
         (0,1431.3333740234375)")
```

10 Passort Seva Kendra

Selenium IDE Screenshot IRCTC website.

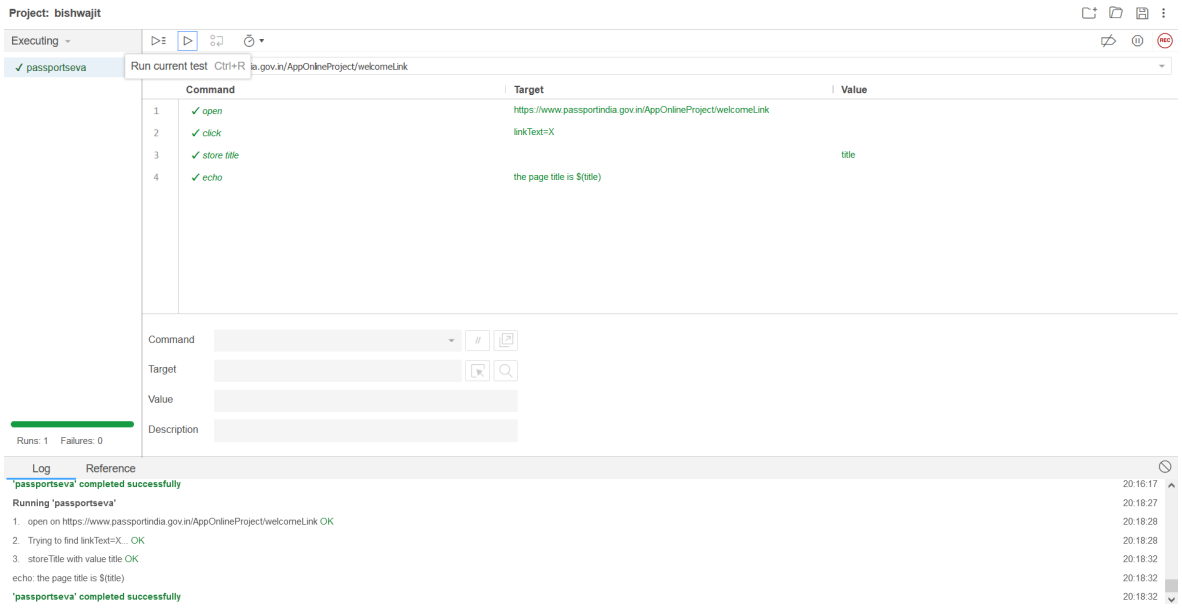

Figure 9: Passort Seva Kendra Website

10.1 Passort Seva Kendra pytest code

```
# Generated by Selenium IDE
import pytest
import time
import json
from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.common.action_chains import ActionChains
from selenium.webdriver.support import expected_conditions
from selenium.webdriver.support.wait import WebDriverWait
from selenium.webdriver.common.keys import Keys
from selenium.webdriver.common.desired_capabilities import
    DesiredCapabilities

class TestPassportseva():
  def setup_method(self, method):
    self.driver = webdriver.Firefox()
    self.vars = {}

  def teardown_method(self, method):
    self.driver.quit()

  def test_passportseva(self):
```

```
22      self.driver.get("https://www.passportindia.gov.in/
           AppOnlineProject/welcomeLink")
23      self.driver.find_element(By.LINK_TEXT, "X").click()
24      self.vars["title"] = self.driver.title
25      print("the page title is $(title)")
```

11 Wikipedia

Selenium IDE Screenshot of Wikipedia website.

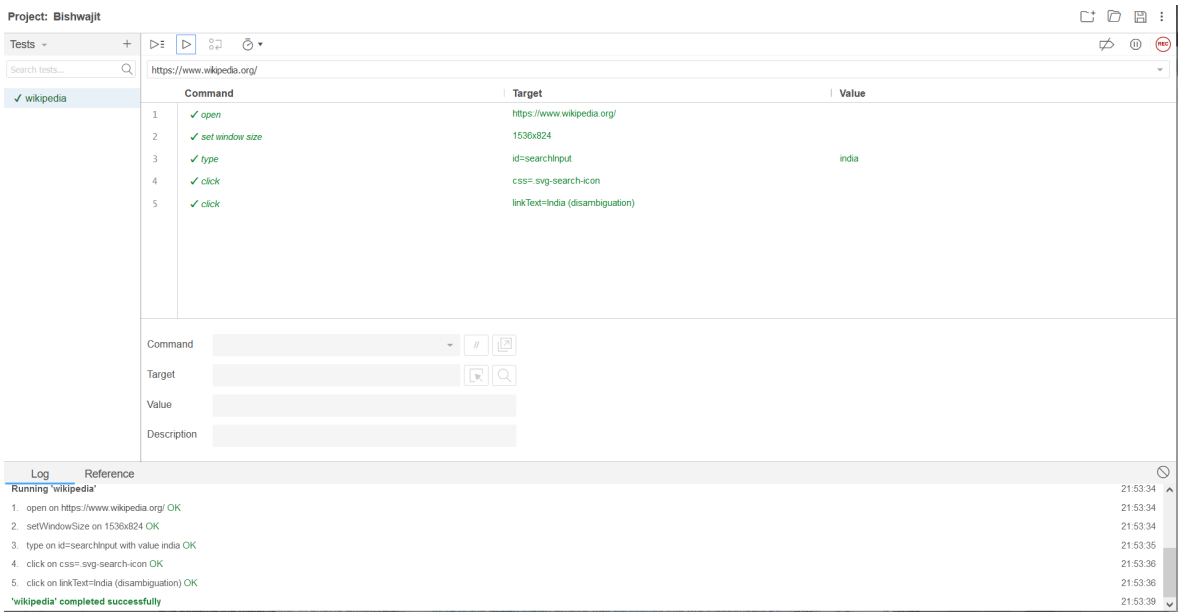

Figure 10: Wikipedia Website

11.1 Wikipedia pytest code

```
1  # Generated by Selenium IDE
2  import pytest
3  import time
4  import json
5  from selenium import webdriver
6  from selenium.webdriver.common.by import By
7  from selenium.webdriver.common.action_chains import ActionChains
8  from selenium.webdriver.support import expected_conditions
9  from selenium.webdriver.support.wait import WebDriverWait
10 from selenium.webdriver.common.keys import Keys
11 from selenium.webdriver.common.desired_capabilities import
      DesiredCapabilities
12
13 class TestWikipedia():
```

```
  def setup_method(self, method):
    self.driver = webdriver.Firefox()
    self.vars = {}

  def teardown_method(self, method):
    self.driver.quit()

  def test_wikipedia(self):
    self.driver.get("https://www.wikipedia.org/")
    self.driver.set_window_size(1536, 824)
    self.driver.find_element(By.ID, "searchInput").send_keys("
        india")
    self.driver.find_element(By.CSS_SELECTOR, ".svg-search-icon")
        .click()
    self.driver.find_element(By.LINK_TEXT, "India (disambiguation
        )").click()
```

12 Zimbra

Selenium IDE Screenshot of Zimbra mail.

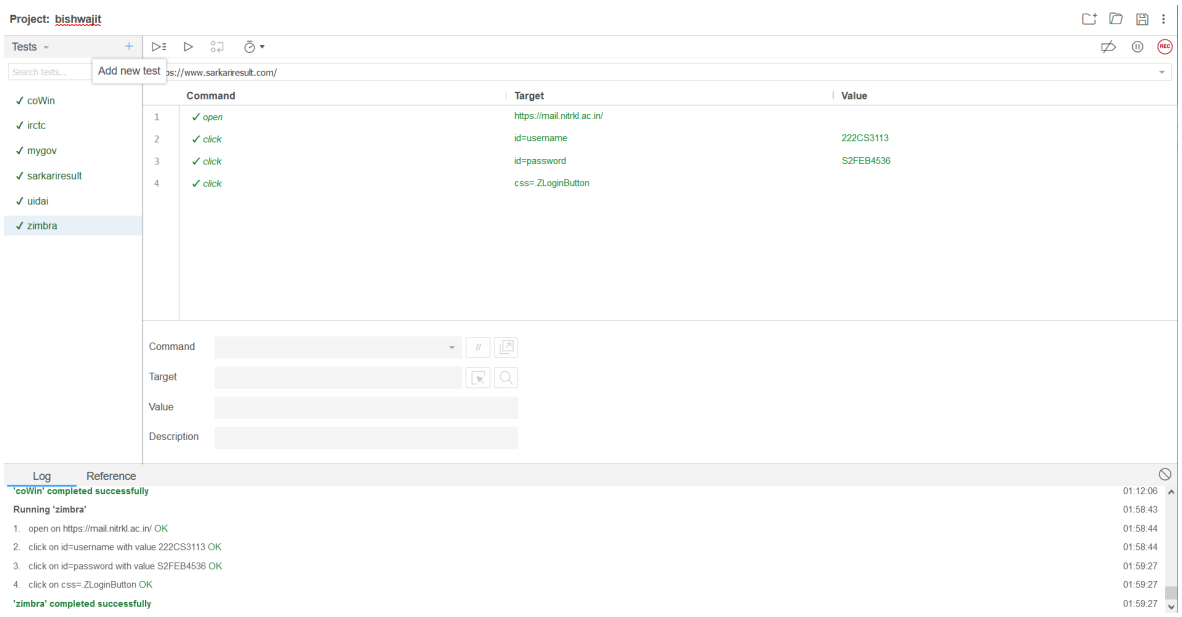

Figure 11: Zimbra mail

12.1 Zimbra pytest code

```
# Generated by Selenium IDE
import pytest
import time
```

```
import json
from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.common.action_chains import ActionChains
from selenium.webdriver.support import expected_conditions
from selenium.webdriver.support.wait import WebDriverWait
from selenium.webdriver.common.keys import Keys
from selenium.webdriver.common.desired_capabilities import
   DesiredCapabilities

class TestZimbra():
  def setup_method(self, method):
    self.driver = webdriver.Firefox()
    self.vars = {}

  def teardown_method(self, method):
    self.driver.quit()

  def test_zimbra(self):
    self.driver.get("https://mail.nitrkl.ac.in/")
    self.driver.find_element(By.ID, "username").click()
    self.driver.find_element(By.ID, "password").click()
    self.driver.find_element(By.CSS_SELECTOR, ".ZLoginButton").
       click()
```

13 EDX

Selenium IDE Screenshot of edX website.

13.1 EDX pytest code

```
# Generated by Selenium IDE
import pytest
import time
import json
from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.common.action_chains import ActionChains
from selenium.webdriver.support import expected_conditions
from selenium.webdriver.support.wait import WebDriverWait
from selenium.webdriver.common.keys import Keys
from selenium.webdriver.common.desired_capabilities import
   DesiredCapabilities

class TestEdx():
```

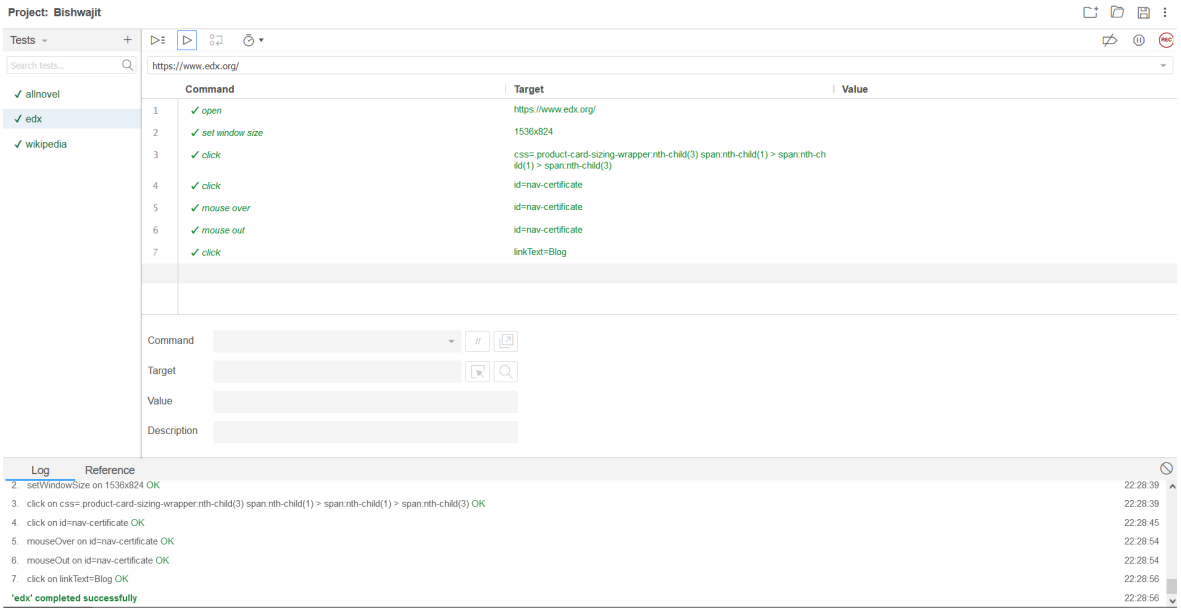

Figure 12: EDX Website

```
  def setup_method(self, method):
    self.driver = webdriver.Firefox()
    self.vars = {}

  def teardown_method(self, method):
    self.driver.quit()

  def test_edx(self):
    self.driver.get("https://www.edx.org/")
    self.driver.set_window_size(1536, 824)
    self.driver.find_element(By.CSS_SELECTOR, ".product-card-
       sizing-wrapper:nth-child(3) span:nth-child(1) > span:nth-
       child(1) > span:nth-child(3)").click()
    self.driver.find_element(By.ID, "nav-certificate").click()
    element = self.driver.find_element(By.ID, "nav-certificate")
    actions = ActionChains(self.driver)
    actions.move_to_element(element).perform()
    element = self.driver.find_element(By.CSS_SELECTOR, "body")
    actions = ActionChains(self.driver)
    actions.move_to_element(element, 0, 0).perform()
    self.driver.find_element(By.LINK_TEXT, "Blog").click()
```

14 LeetCode

Selenium IDE Screenshot of LeetCode website.

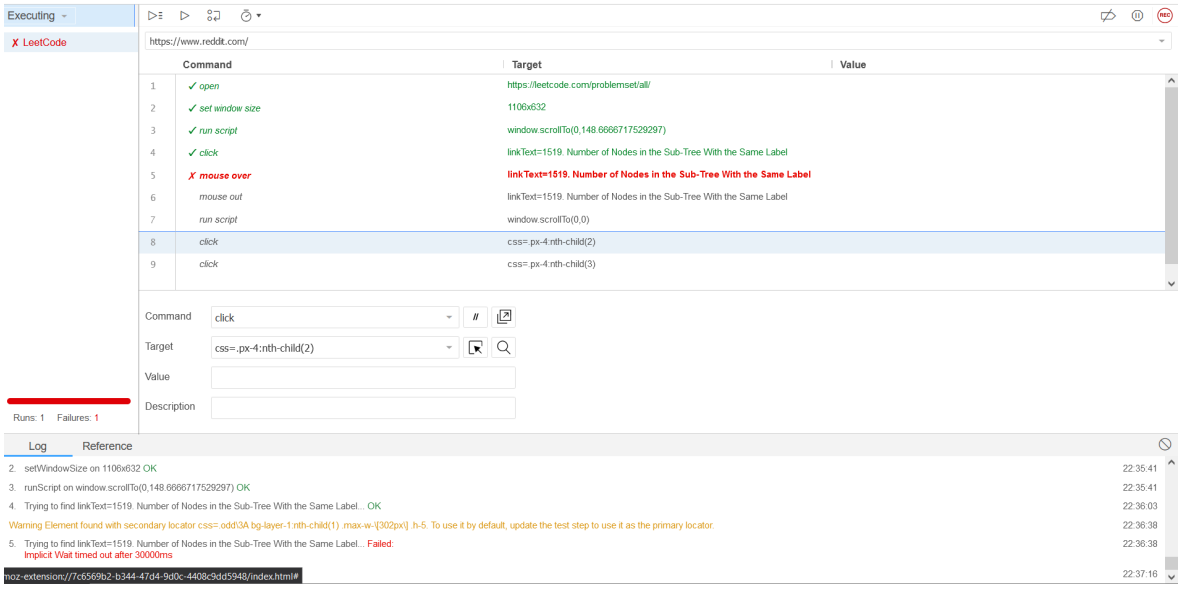

Figure 13: LeetCode Website

14.1 LeetCode pytest code

```
# Generated by Selenium IDE
import pytest
import time
import json
from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.common.action_chains import ActionChains
from selenium.webdriver.support import expected_conditions
from selenium.webdriver.support.wait import WebDriverWait
from selenium.webdriver.common.keys import Keys
from selenium.webdriver.common.desired_capabilities import
    DesiredCapabilities

class TestLeetCode():
  def setup_method(self, method):
    self.driver = webdriver.Firefox()
    self.vars = {}

  def teardown_method(self, method):
    self.driver.quit()

  def test_leetCode(self):
    self.driver.get("https://leetcode.com/problemset/all/")
    self.driver.set_window_size(1106, 632)
    self.driver.execute_script("window.scrollTo
        (0,148.6666717529297)")
    self.driver.find_element(By.LINK_TEXT, "1519. Number of Nodes
        in the Sub-Tree With the Same Label").click()
```

```
    element = self.driver.find_element(By.LINK_TEXT, "1519.
        Number of Nodes in the Sub-Tree With the Same Label")
    actions = ActionChains(self.driver)
    actions.move_to_element(element).perform()
    element = self.driver.find_element(By.CSS_SELECTOR, "body")
    actions = ActionChains(self.driver)
    actions.move_to_element(element, 0, 0).perform()
    self.driver.execute_script("window.scrollTo(0,0)")
    self.driver.find_element(By.CSS_SELECTOR, ".px-4:nth-child(2)
        ").click()
    self.driver.find_element(By.CSS_SELECTOR, ".px-4:nth-child(3)
        ").click()
```

15 Allnovel

Selenium IDE Screenshot IRCTC website.

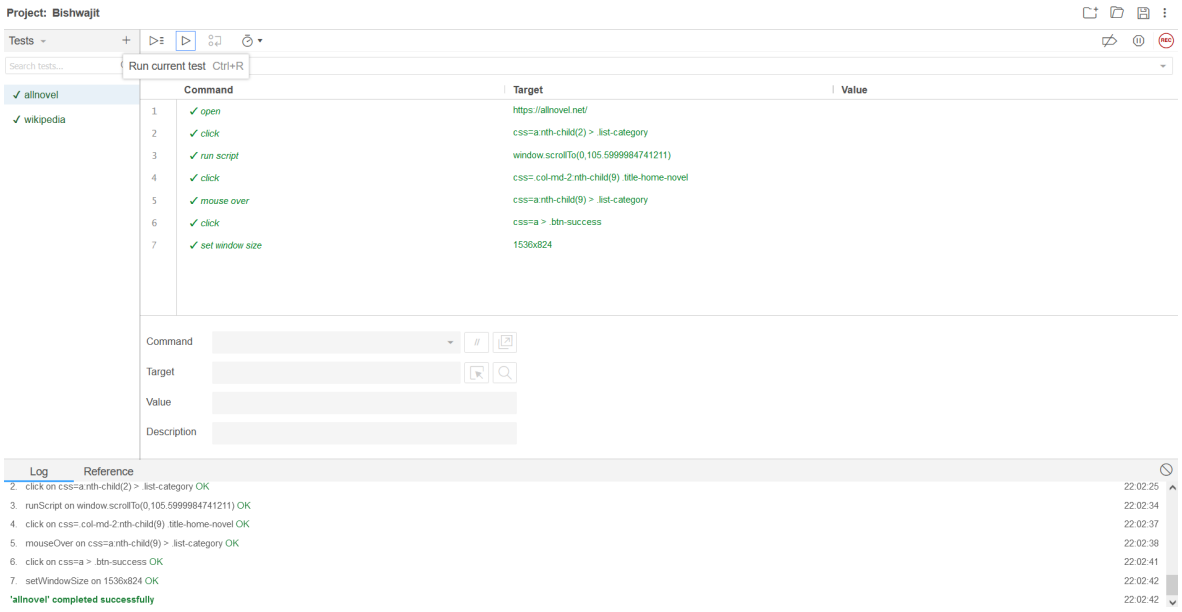

Figure 14: Allnovel Website

15.1 Allnovel pytest code

```
# Generated by Selenium IDE
import pytest
import time
import json
from selenium import webdriver
from selenium.webdriver.common.by import By
from selenium.webdriver.common.action_chains import ActionChains
```

```
from selenium.webdriver.support import expected_conditions
from selenium.webdriver.support.wait import WebDriverWait
from selenium.webdriver.common.keys import Keys
from selenium.webdriver.common.desired_capabilities import
    DesiredCapabilities

class TestAllnovel():
  def setup_method(self, method):
    self.driver = webdriver.Firefox()
    self.vars = {}

  def teardown_method(self, method):
    self.driver.quit()

  def test_allnovel(self):
    self.driver.get("https://allnovel.net/")
    self.driver.find_element(By.CSS_SELECTOR, "a:nth-child(2) > .
        list-category").click()
    self.driver.execute_script("window.scrollTo
        (0,105.5999984741211)")
    self.driver.find_element(By.CSS_SELECTOR, ".col-md-2:nth-
        child(9) .title-home-novel").click()
    element = self.driver.find_element(By.CSS_SELECTOR, "a:nth-
        child(9) > .list-category")
    actions = ActionChains(self.driver)
    actions.move_to_element(element).perform()
    self.driver.find_element(By.CSS_SELECTOR, "a > .btn-success")
        .click()
    self.driver.set_window_size(1536, 824)
```

16 Coursera

Selenium IDE Screenshot of Coursera website.

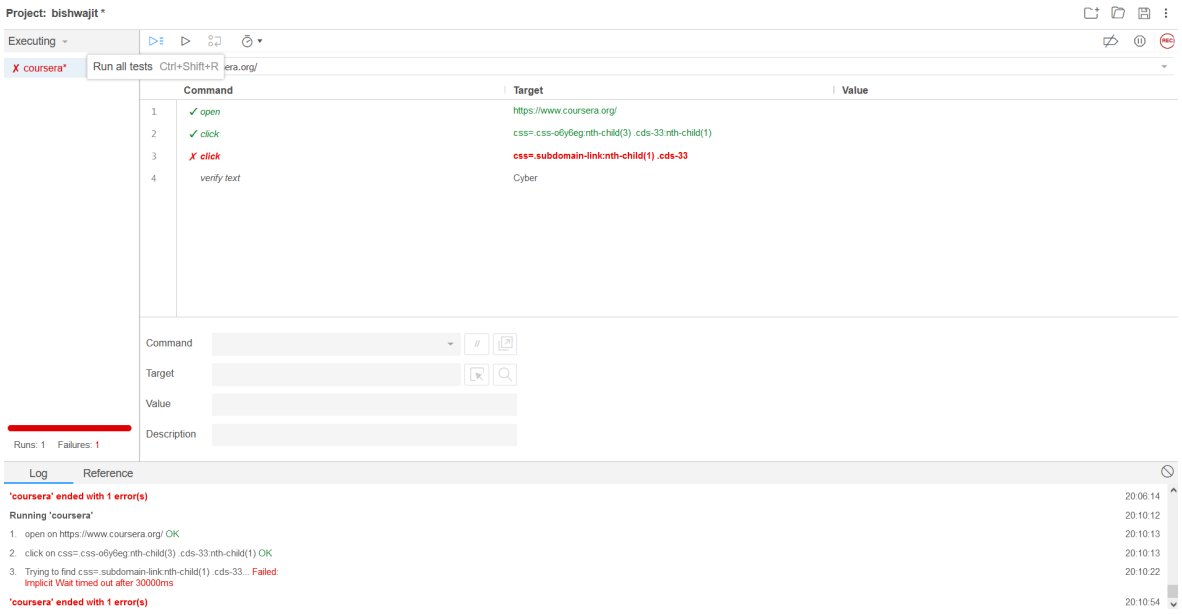

Figure 15: Coursera Website

16.1 Failed

Implicit Timed out