National University of Computer & Emerging Sciences
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Automation Testing
Software Engineering Assignment # 2

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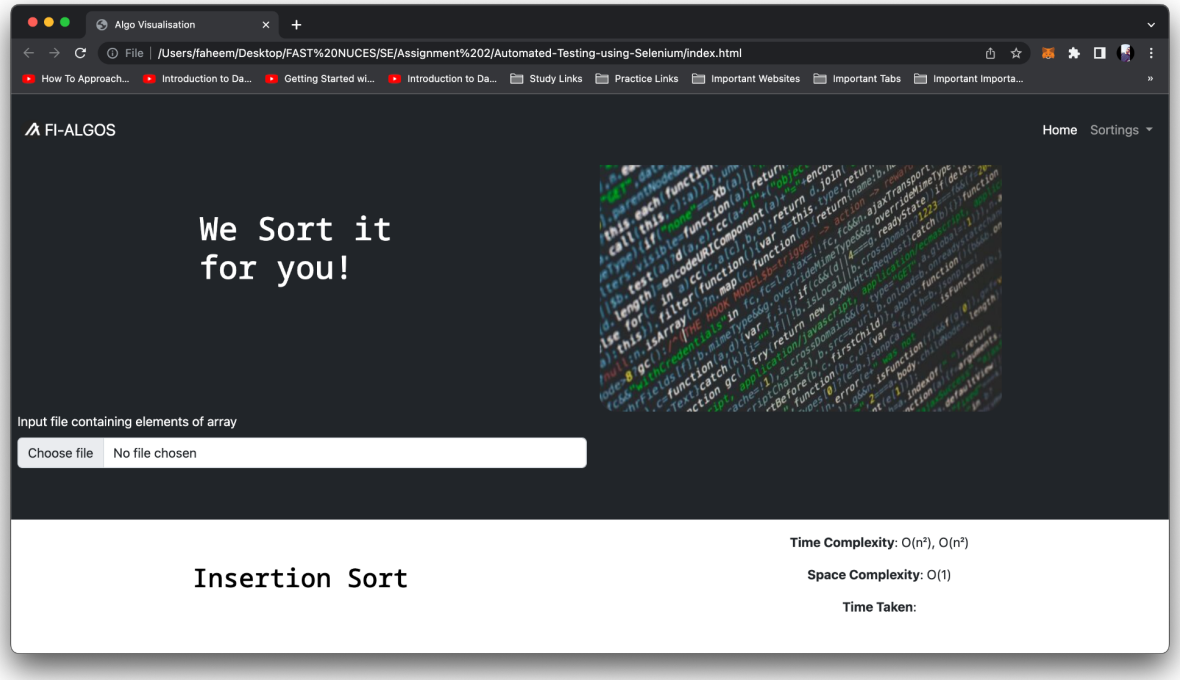
Explanation:

Created two test cases to authenticate if the right type of file data input has been provided and that the data has been sorted correctly (validation test). The other test case is written to check if the right type of file data input has been provided (defect testing). **Both the automated test cases have been written on python using selenium**.

Functional Webpage on which the testing has been done:



Test Case 1 (Validation Test):

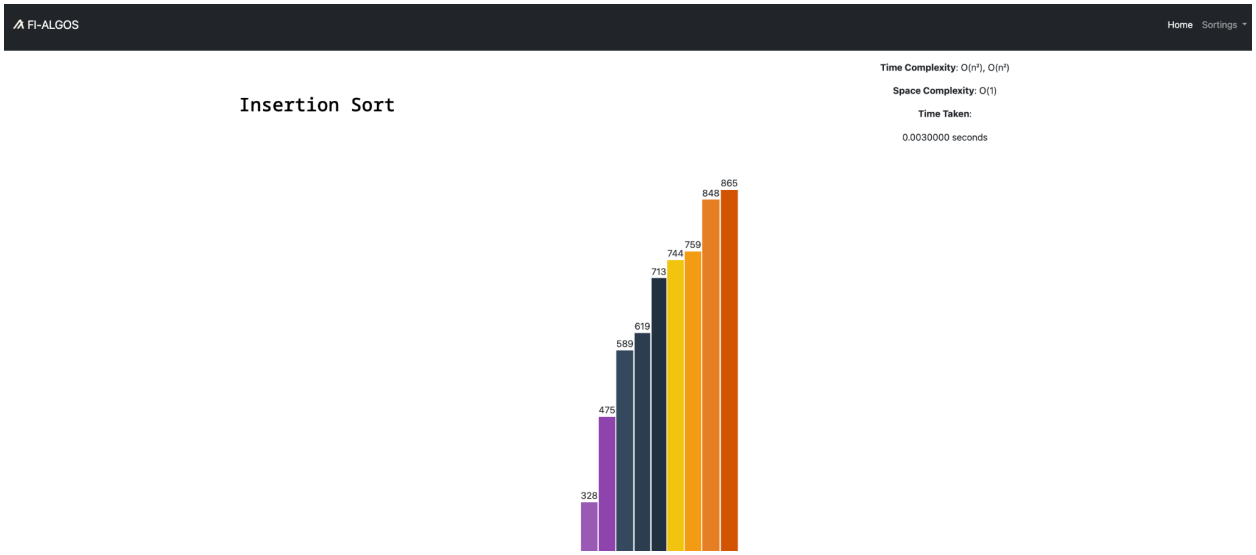
```python
from selenium import webdriver
from selenium.webdriver.chrome.options import Options
from selenium.webdriver.chrome.service import Service
from selenium.webdriver.common.desired_capabilities import DesiredCapabilities
import ast

def validationTest():
    options = Options()
    options.add_argument('--start-maximized')

    service = Service()

    dc = DesiredCapabilities.CHROME
    dc['loggingPrefs'] = { 'browser':'ALL' }

    driver = webdriver.Chrome(options=options, service=service, desired_capabilities=dc)
    driver.get(r'file:///Users/faheem/Desktop/FAST%20NUCES/SE/Assignment%202/Automated-Testing-using-Selenium/index.html')

    file_input = driver.find_element('id',"formFile")

    file_input.send_keys(r"/Users/faheem/Desktop/FAST NUCES/SE/Assignment 2/Automated-Testing-using-Selenium/input.txt")


    submitButton = driver.find_element('xpath',"//button[@id='ins-btn']")
    submitButton.send_keys("\n")

    f = open("input.txt", "r")

    ls = ast.literal_eval(f.readline())
    arr = driver.execute_script('return data')
    ls = ls.split(',')
    ls = [int(val) for val in ls]
    ls = sorted(ls)
    arr = [int(val) for val in arr]


    assert ls == arr, "Data not sorted. TEST FAILED"
    print("VALIDATION TEST PASSED")
    driver.quit()

validationTest()
```

Test Case 2 (Defect Test):

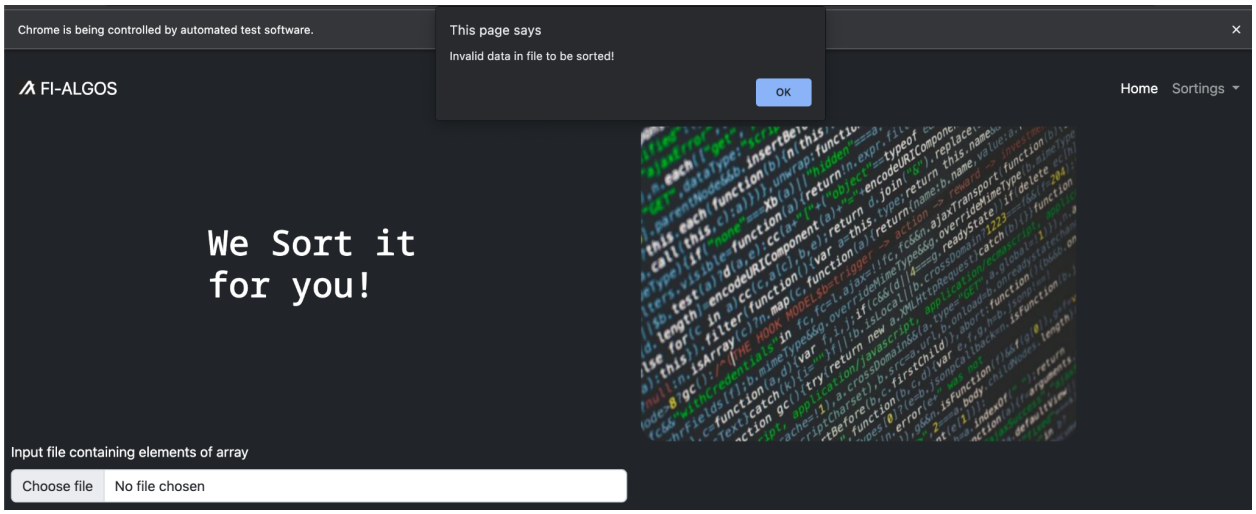
```python
from selenium import webdriver
from selenium.webdriver.chrome.options import Options
from selenium.webdriver.chrome.service import Service
from selenium.webdriver.common.desired_capabilities import DesiredCapabilities


def defectTest():
    options = Options()
    options.add_argument('--start-maximized')

    service = Service()

    dc = DesiredCapabilities.CHROME
    dc['loggingPrefs'] = { 'browser':'ALL' }

    driver = webdriver.Chrome(options=options, service=service, desired_capabilities=dc)
    driver.get(r'file:///Users/faheem/Desktop/FAST%20NUCES/SE/Assignment%202/Automated-Testing-using-Selenium/index.html')

    file_input = driver.find_element('id',"formFile")

    file_input.send_keys(r"/Users/faheem/Desktop/FAST NUCES/SE/Assignment 2/Automated-Testing-using-Selenium/input-wrong.txt")


    submitButton = driver.find_element('xpath',"//button[@id='ins-btn']")
    submitButton.send_keys("\n")

    import ast

    f = open("input-wrong.txt", "r")

    ls = ast.literal_eval(f.readline())
    arr = driver.execute_script('return data')
    ls = ls.split(',')

    check = False
    for ch in ls:
        if ch.isdigit() == False:
            check = True
            break

    assert check != True, 'Wrong input given to the program. This type of data cannot be sorted. DEFECT TEST FAILED'
    print("DEFECT TEST PASSED")
    driver.quit()

defectTest()
```

Running the test cases give the following results:

Test Case 1:



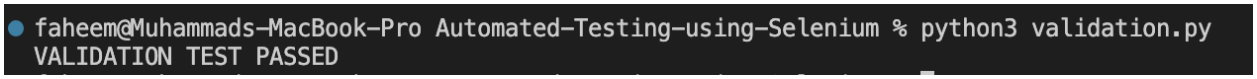
Test Case 2:



Console Results:

The programmes for both the test cases give the following console based results.

Test Case 1:



Test Case 2: