🡺 Your name: **Jason Jun** Student No.: **126683200** UserID: **jjun10@mySeneca.ca**

Be the Boss of your Browser

🡺 Which of our tabs/subframe has the highest CPU/Energy Impact and what is the value?   
Which is consuming the most memory and what is the value?

*[Browser]* has the highest CPU/Energy Impact with a value of 4.7

*[GPU Process]* consumes the most memory with a value of 1,080,936K

[API](https://en.wikipedia.org/wiki/Application_programming_interface) – Application Program Interface

a 🡺 What is sent via the API to another system?

Via the API, a request is sent to another system.

b 🡺 What is sent from the other system upon receipt of the API?

The other system sends the response back upon receipt of the API.

c 🡺 What character signals the beginning of a [query string](https://en.wikipedia.org/wiki/Query_string) in a [URI](https://en.wikipedia.org/wiki/Uniform_Resource_Identifier) / [URL](https://en.wikipedia.org/wiki/URL) ?

The character is “?”.

d 🡺 What character separates multiple key=value pairs?

The character is “&”.

e 🡺 What are three other terms for a [key=value pair](https://en.wikipedia.org/wiki/Attribute%E2%80%93value_pair)?

The other three terms are:

**attribute-value pair**, **name-value pair**, and **field-value pair**

f 🡺 What does the JSON acronym stand for? What does a JSON object contain?

JSON stands for: JavaScript Object Notation

JSON object contain attribute-value pairs and array data types.

g 🡺 What was your [API request](https://openweathermap.org/current#name) to get the weather for a city *other than Toronto* in metric units?

City: Seoul

API Request: http://api.openweathermap.org/data/2.5/weather?q=Seoul&appid=fe781e059e25c50f460f226e052aaa0d

h 🡺 What JSON data was returned from your API request?

{

"coord": {

"lon": 126.98,

"lat": 37.57

},

"weather": [

{

"id": 804,

"main": "Clouds",

"description": "overcast clouds",

"icon": "04d"

}

],

"base": "stations",

"main": {

"temp": 285.91,

"feels\_like": 283.68,

"temp\_min": 283.15,

"temp\_max": 287.15,

"pressure": 1025,

"humidity": 58

},

"visibility": 10000,

"wind": {

"speed": 1.5,

"deg": 10

},

"clouds": {

"all": 90

},

"dt": 1602816452,

"sys": {

"type": 1,

"id": 8105,

"country": "KR",

"sunrise": 1602798057,

"sunset": 1602838440

},

"timezone": 32400,

"id": 1835848,

"name": "Seoul",

"cod": 200

}

APIs to determine local time

🡺 TZ.1 What is the URL of your time zone API request for Toronto?

http://worldtimeapi.org/api/timezone/America/Toronto

🡺 TZ.2 What JSON data was returned from your Toronto time zone API request? Using Firefox, copy the Raw Data from "Pretty Print" format, and paste here please.

{

"abbreviation": "EDT",

"client\_ip": "74.14.129.221",

"datetime": "2020-10-15T23:02:16.492870-04:00",

"day\_of\_week": 4,

"day\_of\_year": 289,

"dst": true,

"dst\_from": "2020-03-08T07:00:00+00:00",

"dst\_offset": 3600,

"dst\_until": "2020-11-01T06:00:00+00:00",

"raw\_offset": -18000,

"timezone": "America/Toronto",

"unixtime": 1602817336,

"utc\_datetime": "2020-10-16T03:02:16.492870+00:00",

"utc\_offset": "-04:00",

"week\_number": 42

}

SDLC – System Development Life Cycle

🡺 **Determine**: This is largely given by the assignment specs but how do you become comfortable with the scope of the assignment? How do you create a plan to complete it?

To become comfortable with the scope of the assignment, I listened to the lectures that were related to the assignment and read the instruction multiple times until I fully understood it. I plan to complete the assignment by using the knowledge I learned in lectures and if I have a question, I am going to email the professor about it. Moreover, handing in the assignment on time is important, so I do not get mark deducted.

🡺 **Define** the detailed requirements. What do you do to fully understand the problem? How do you ensure you have a firm grasp of all inputs, processing, and outputs?

The requirements were for me to finish the missing areas in the source code given by my professor, using what I have learned in a recent lecture. The missing areas included writing a function and outputs. To fully understand the problem, I have decided what each missing area was asking me to do. Just in case I was lacking some information, I have read the instruction more carefully while creating a basic design of the solution in my head. I ensured myself I had the firm grasp of all inputs, processing, and outputs from the past experiences of completing several workshop before the current workshop.

🡺 **Design**: Please, don't jump into coding yet. How will you design a solution? Do you know the technical skills the solution requires? What about creating pseudocode or a flowchart to document the algorithm? Is there value in writing all the coding comments first? (The answer is yes.) How will the process of design help the development process?

To design my solution, I have decided to create a pseudocode. The technical skills that were required for the solution were programming, debugging, and structuring. Also, writing the comments in the code helped a lot aside from the pseudocode because when writing the code, the comments helped guided what to write and when professor reads my code, the comments will help him to understand what I have wrote better. The process of design helped a lot because it allowed me to understand the assignment better and able to think clearly when writing the code.

🡺 **Develop**: How do you translate your solution's design into source code and commands, that is, how will the solution be implemented? What is your process of writing, building, testing, and debugging code or commands? *(Please do not send any source code...just a description of your development process.)*

The solution is implemented into source code through using a software called, “Microsoft Visual Studio”. With the Visual Studio, I am able to translate my solution into source code using what I have learned so far in lecture. Every time a part of solution is complete, I test it few times to make sure the next solution is good to be implemented. Then testing step is repeated every time a part of solution is written, until the whole solution is completed. However, there are errors occurring during the testing and I check for the error message and fix them. If the error message does not make sense, I run the debugging system within the Visual Studio and check what went wrong.

🡺 **Deliver**: How do you manage the delivery and deployment of your project? Yes, there are required steps on the matrix server. How do you resolve issues when things do not work as expected? What do you do and how do you make changes to achieve a successful test? Finally, how do you conceive of what to write for the reflection text?

After completing the solution and checking if everything went well, I first turned on the GlobalProtect VPN to be able to access to Seneca’s matrix server. Then I have opened the SFTP GUI app, WinSCP, and connect to the Seneca’s matrix server. Then I have transferred the required source code file to my Seneca’s account server. Then using the PuTTY that have opened alongside the WinSCP when I logged in, I have used few Linux commands to test if my source code is working well and handed in the file. If the results from the PuTTY is not what the professor had wanted, it would alert with an error message and decline my submission. Then I have to check the error message it gave me and fix the code and hand in again, until the outputs are correct. To write the reflection text, I follow the instructions given by the professor, which requires for me to write what I have learned through the workshop and few other questions he added for me to answer.

IoT – Internet of Things

🡺 1. Smart Watch: Smart watch would make people’s lives more comfortable and efficient and some examples of the smart watches would be Galaxy Watch or Apple Watch. Wearing this device would help people a lot because, it has many functions, such as vital check, checking messages, and much more. By having the watches connected to the network, the user is able to move information from watch to their phone and from the phone to the watch. Hence, the smart watch is needed for the current society we live in.

🡺 2. Smart Cars: Smart cars allow people to transport and able to park with extra safety. Compared to the past system of cars, the current software implemented in the car allows the drivers to be cautious of their surroundings and aid those who are not comfortable driving. With the smart cars connected with the network, the drivers are able to drive without worrying too much and able to use GPS to go their designated destination.

🡺 3. Smart Home: Smart home is a software implemented in a house to get the homeowners to be more comfortable and be efficient with their daily lives. The software is able to get the owners to secure their house and control the inner system easily. When connected to the network, the software enables the owners to change the temperature and get them to turn on other devices through the phones or tablets. As the technology is developing with more connectivity through network, smart home is needed for the society.

Software Version

🡺What is the name of the software and its current version?

Name: Microsoft Visual Studio

Current Version: 16.7.6

🡺What do the components of the version number mean?

The first number is called “major version number” and it represents a major change or release.

The second number is referred as the “minor version number” the minor update that affects within the features of the application.

The third number is known as an “extra minor version number”, which is just a bug fix update.

🡺In what way would that software be [forward compatible](https://en.wikipedia.org/wiki/Forward_compatibility)?

The Visual Studio is forward compatible because its earlier version is compatible or can support newer versions that are released in the future. Also, the earlier versions ignore newer parts that it not able to process.

🡺What can you observe to indicate that the software is [backward compatible](https://en.wikipedia.org/wiki/Backward_compatibility)?

This Visual Studio is backward compatible because its newer version is able to use the interface or the data from the previous versions.

🡺Find the release notes for that software and include the URL, release date, a description of one of the latest changes.

URL: <https://docs.microsoft.com/en-us/visualstudio/releases/2019/release-notes#16.7.6>

Release Date: October 13, 2020

Description

- Fixed a bug that affects debugging https enabled Service Fabric Application.

- Support Service Fabric nuget packages with external dependencies.