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***5 points each*** *for the following Task Manager, API, and Timezone questions.*

**Using either Chrome or Firefox, access our course Blackboard page, go to Course Documents. Click "ICT News Item Presentation" which should open in a new tab. Open the browser's Task Manager (see above)**

1. 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?

Tab: **CPR101ZEE.07797.2217** News Presentation assigned.docx has the highest CPU/Energy Impact with a value of 3.6.

*Subframe:* ***https://office.com/*** consumes the most memory with a value of 35,388K

2. What is sent via the API from one system to another?  
What is sent back from that other system upon receipt of the API?

Sent to: A ‘request’ with a set of coded instructions.  
Sent back from: A ‘response’ consisting of a number code and confirmation for what has been changed.

3. What does the JSON acronym stand for?   
What does a JSON object contain?

- JSON: “JavaScript Object Notation” is a data-interchange programming language.

- JSON objects contains of name/value pairs in an unordered collection. It’s external form is a string wrapped in curly braces and colons & commas between the values and names.

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

https://api.openweathermap.org/data/2.5/weather?q=winnipeg&appid=fe781e059e25c50f460f226e052aaa0d

5. What JSON data was returned from your API request?

{

"coord": {

"lon": -97.147,

"lat": 49.8844

},

"weather": [

{

"id": 711,

"main": "Smoke",

"description": "smoke",

"icon": "50d"

}

],

"base": "stations",

"main": {

"temp": 282.6,

"feels\_like": 279.47,

"temp\_min": 282.06,

"temp\_max": 283.18,

"pressure": 1007,

"humidity": 89

},

"visibility": 8047,

"wind": {

"speed": 6.71,

"deg": 70

},

"clouds": {

"all": 90

},

"dt": 1634148407,

"sys": {

"type": 2,

"id": 47666,

"country": "CA",

"sunrise": 1634129247,

"sunset": 1634168502

},

"timezone": -18000,

"id": 6183235,

"name": "Winnipeg",

"cod": 200

}

6. What is the URL of your time zone API request for any city *except* Toronto?

https://worldtimeapi.org/api/timezone/America/Whitehorse

7. What JSON data was returned from your time zone API request?

{

"abbreviation": "MST",

"client\_ip": "174.89.101.243",

"datetime": "2021-10-13T11:17:03.161067-07:00",

"day\_of\_week": 3,

"day\_of\_year": 286,

"dst": false,

"dst\_from": null,

"dst\_offset": 0,

"dst\_until": null,

"raw\_offset": -25200,

"timezone": "America/Whitehorse",

"unixtime": 1634149023,

"utc\_datetime": "2021-10-13T18:17:03.161067+00:00",

"utc\_offset": "-07:00",

"week\_number": 41

}

8. **(7.5 points)** What is the logic to convert the Unix UTC timestamp to a Unix local timestamp using the JSON data from worldtimeapi.org?

In order to change from UTC-Unix timestamp to Whitehorse time (which Is my local in this case), I deducted utc\_offset which is -7 from utc\_datetime which is 18:17 the results in 11:17 (24h format) in Whitehorse.

EDT: Mountain time zone.

client ip: The internet protocol address of the PC sent the message by API

datetime: current local time in local time (Whitehorse)

day of week: 3, The third day of the week (Wednesday)

day of year: Current day from the beginning of the current year which is 286

dst: null

dst from: The date the day light saving started in Whitehorse

dst offset: 0 secndifference between current time in Toronto and daylight saving time

"dst\_until": null

for Toronto.

"raw\_offset": -25200; The difference of -7 hours, excluding daylight time, between UTC time and

Toronto time. UTC-7= Whitehorse time

"timezone": "America/Whitehorse": Time zone format that can be used at the end of URL to request

information about Whitehorse time

"unixtime": 1634149023, number of seconds from Epoch, or reference point

"utc\_datetime": "2021-10-13T18:17:03.161067+00:00", Current UTC date and time

"utc\_offset": "-07:00", The number of hours difference between UTC and Whitehorse time

"week\_number": 41, We are in week 41 of the year 2021

9. **(7.5 points)** In the TZ.2 JSON schema, find the **values** identified in the answer box below. The only value not found is the local timestamp. Calculate and insert 0your city's local timestamp value. Check it as noted above.

Unix timestamp of2021-10-13T18:17:03.161067+00:00

Values used to convert the Unix timestamp into local timestamp:

Local timestamp of2021-10-13T11:17:03.161067-07:00

SDLC – System Development Life Cycle – 35 points

**(35 points = 7.5 × 5 steps below, 75+ words each.** Note that the minimum word count gets more or less average marks depending on the quality of content. To go above average, see the marking rubric in the course Announcements.**)**

***What is the problem?***

**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?

Once I receive any assignment to work on, I read the assignment carefully. I figure out what actually is being asked and look at each question from the start to the end. Wherever needed, I take the help of the activity instruction document which is provided along with it. Once I am done with the preparation and understanding, I start doing my activity. And I usually tend to complete any activity in one go as it is more easier and understandable for me to do it in one go. Moreover, I also do a proof reading at the end before submitting to look if there are any minor errors or not.

**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?

In order to fully understand a problem, I analyze each problem with my absolute best. I apply critical thinking on the parts where the problem is and carefully examine each step of execution. After my analysis, I get a clear point of view on inputs, the execution and the result . If still it has a problem, I try doing different debugging methods and I also perform brainstorming in some of the cases.

***What is the solution?***

**Design**: 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?

Designing is one of the most important factor an output, whatever it might be i.e. a code, a basic output, a flowchart, a pseudocode, every single thing should have a proper format and should be easy to understand. Yes, I do implement the pseudocode and flowchart processes in my day-to-day life. Talking about the comments in a code, I believe it is super crucial to add those tiny little comments, yet so informative that once we write those, we don’t need to worry about understanding those code even after years. I think the process of design do help a lot in the development process, as it gives a clear view and idea of what is needed to be done.

**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.)*

Once I am done designing my solution, I translate those easy to understand human language in a bit low-level computer language as a code. I take care of following a proper syntax. I add comments for my reference wherever required.

**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?

Once I complete with my work, I first connect to a student VPN and login to the matrix server to upload my work. Once I upload my source code to the designated folder I open the Putty terminal. In that terminal I go to the directory where my source code is located and run the code using the gcc command to look for any errors. Once that is done, I type the command for submission and input all the values same as there are in the sample. If, everything is correct it will be automatically submitted, and if not, if there are errors in spaces or lines it will display and I need to correct it. Once everything is fine, it takes the work.

Software Version, 5 × 3 points

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

Microsoft Visual Studio Community 2019, Version:- 16.11.5

What do the components of the version number mean?

Firstly, it shows that the software is in release state. 16 shows that it is a major release, 11 indicates the minor updates which enhances the in-built features, 5 shows about the bug fixes which in very minor and common.

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

If a software’s base architecture is not being changed, it will support with the newer version which will be released in future. This is called forward compatibility of a software so that it will still be able to work in future.

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

If a newly developed software is being made as such that it work with the previous versions. It will certainly be a backward compatible software.

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

<https://docs.microsoft.com/en-us/visualstudio/releases/2019/release-notes?utm_source=vshelp>

release date:- October 12, 2021

A potential flag bypass exists in OpenSSL library, which is consumed by Git :-

The X509\_V\_FLAG\_X509\_STRICT flag enables additional security checks of the certificates present in a certificate chain. It is not set by default. Starting from OpenSSL version 1.1.1h a check to disallow certificates in the chain that have explicitly encoded elliptic curve parameters was added as an additional strict check.