Hla Myint Myat185923216 hmyat1@mySeneca.ca  
Click or tap here to enter text.

**Using Mozilla Firefox is strongly recommended for this Activity because it can transform JSON responses into a human readable format.** (Raw Data > "Pretty Print")

(#)*points for the following API and Time Zone questions.*

1. (4) 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: another software system or a remote server (Request)

Sent back from: the system that receives the API request (Response in JSON or XML)

2. (4) Use api.agify.io to predict the age of a person using your given name and ISO country code.

API URL request: https://api.agify.io/?name=Crystal&country\_id=CA

JSON response: {"age":52,"count":273,"country\_id":"CA","name":"Crystal"}

3. (4) What does ip-api know about your public IP address?

API URL request: https://ip-api.com/#crystal/192.178.0.2

JSON response: {

"status": "fail",

"message": "invalid query",

"query": "crystal/192.178.0.2"

}

4. (5) Use the API at openweathermap.org for information about any city *other than Toronto* in metric units?

API URL request:

JSON response:

5. (5) Use the timezone API request at worldtimeapi.org for any city *except* Toronto. What JSON data was returned?

API URL request: http://worldtimeapi.org/api/timezone/Asia/Tokyo

JSON response: {

"abbreviation": "JST",

"client\_ip": "xxx.xxx.xxx.xxx",

"datetime": "2023-03-19T02:38:35.465962+09:00",

"day\_of\_week": 6,

"day\_of\_year": 78,

"dst": false,

"dst\_from": null,

"dst\_offset": 0,

"dst\_until": null,

"raw\_offset": 32400,

"timezone": "Asia/Tokyo",

"unixtime": 1647689915,

"utc\_datetime": "2023-03-18T17:38:35.465962+00:00",

"utc\_offset": "+09:00",

"week\_number": 11

}

6. (9)Using the above JSON data from worldtimeapi.org, fill in the JSON key / value pairs related to the descriptions in the table below.   
The only key / value not found is the *location's timestamp.*Convert the Unix UTC timestamp to a location timestamp showing the calculations.   
The location timestamp is same as a UTC timestamp with different seconds +/- adjusted for the location's time zone.

|  |  |  |
| --- | --- | --- |
| *See Response Schema* | JSON key | JSON value |
| UTC date/time in ISO8601 format | "utc\_datetime" | "2023-03-19T05:50:34.234674+00:00" |
| Unix UTC timestamp | "unixtime" | 1647696773 |
| Unix UTC to location difference | "raw\_offset" | 3600 |
| Location's daylight saving time difference | "dst\_offset" | 3600 |
| Location date/time in ISO8601 format | "datetime" | "2023-03-19T00:52:53" |
| How do you calculate the *location's* *timestamp* from the UTC timestamp using JSON keys? | *1647696773 + 3600 + 3600 = 1647703973* | *Calculated location timestamp value is:*  "2023-03-19T00:52:53" |

**7.**  (5) How did you confirm that your location timestamp when converted to data/time was the same as the Location date/time in ISO8601 format in the JSON schema? Show your test and the result.

The local time converted for Paris was March 19, 2023, 1:52:53 AM, and the estimated location timestamp was "2023-03-19T00:52:53". The fact that these values match confirms that the conversion was correct.‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬‬

SDLC – System Development Life Cycle

**54 points = 9 points × 6 items, 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 marking rubric in 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?

To become comfortable with the scope of the assignment, we must understand what exactly we have to do and from where to begin. We can take some steps to create a plan for completing the assignment-

>>Review the instructions before doing it

>>Create a timeline to do the tasks

>>Discuss or ask professor if you don’t understand

**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?

>>To fully understand the problem, we can use decomposition method, which is breaking down the problem into specific forms.

>>Clarifying doubts before solving any problem

>>Write pseudocode or create flowchart for deep understanding of the concept

***What is the solution?***

**Design**: How will you design a solution? 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?

The design process can support development in a various way. We can identify potential problems or restrictions early on by breaking down the project or problem into its smallest possible components. We can make sure we've got a clear understanding of the logic and sequence of steps required to solve the problem or finish the project by drawing a flowchart or pseudocode.

**Develop - Programming**: How do you implement the design into source code? What is your process of writing comments and code? *(Please do not send any source code... just describe your development process.)***- Testing**: What is your process to test and debug code? How do you know the output is correct?

Process of writing comments and code-

>>Create a basic structure for code

>>Write the code using programming language

>>Adding comments through steps

>>Test the code

Process to test and debug code-

>>Create set of test cases

>>Run code

>>Debug code

>> Refine code

>>Test again

**Deliver**: How do you manage the delivery and deployment of your project? (specific steps are required 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? How do you conceive of what to write for the reflection text?

**D'oh**: The last stage in industry is ongoing system maintenance and user support. Your case is not that different. You support yourself as the user who keeps track of source code files, ensures the version on matrix is up to date with your own system's version, and keeps the source code maintainable, i.e. easily understandable the next time you look at it. The in-lab workshop is *maintained* to become the at-home version. Your C assignment project will proceed in stages which means maintenance and version control.

**How do you ensure that the in-lab work is maintainable when the at-home work is done?**

**How do you ensure that the first version of an assignment project's code is maintainable when later requirements are added?**

**The in-lab work is maintainable when the at-home work is done-**

**>>** **Break the code into logical modules or functions to make it easier to understand and modify.**

**>>** **Test the code properly to ensure that it works as expected.**

**The first version of an assignment project's code is maintainable when later requirements are added –**

>>Use meaningful variable and function names to make the code more understandable.

>>Continuously test the code to ensure that it is working as expected and that any changes made do not break existing functionality.

Software Version, 5 × 2 points each

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

macOS 13.0.1 (22A400)

What do the components of the version number mean?

Major version number (Significant update or major release)

Minor version number (Addition of new features or smaller updates)

Build number (Bug fixes or other minor improvements)

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

>>use interfaces (APIs)

>>Plan for future changes

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

>>Support older data formats

>> Use backward-compatible interfaces (APIs)

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

URL - <https://www.apple.com/macos/monterey-preview/features/>

Release date - October 25, 2021

One latest change - allows users to control multiple Apple devices, such as Macs, iPads, and even iPhones, using a single mouse and keyboard.