This document contains the rubric examples for the open-ended questions in our paper.

Question 1: Did students understand potential use cases of computational tools in their own fields?

Rubric levels

0. N/A - No answer - Does not apply
1. No or completely inaccurate example
2. Vague application area
3. Generic application area (Uses example from the ebook, or slight variation)
4. Relevant application area (Uses example not provided in ebook)

Lab 1 - SQL

Question: Do you think you will use SQL in your profession? If yes, describe one query that you might use and what you might want to achieve. If no, explain why.

Examples/notes for rubric levels:

2. Vague Application
    - Providing just an application area without explaining how SQL is required
    - "Not sure. But I'd be interested to see data of spotify and its users. Something related to that could be interesting"
3. Generic Application
    - Repeats example from ebook
    - "Potentially, depending on the type of media job. It can assist with organizing crew information and other info. Such uses can be UPDATE or INSERT."
4. Relevant Application
    - "potentially - hospital patient database looking for trends to improve efficiency & patient stay."
    - "I am not sure but I might use it to order and analyze the data and information of clients."

Lab 2 - Web Scraping

Question: Think of one task that would require you to collect information from a webpage. You can look at the examples in the tutorial for inspiration, but try to write down something different.

Examples/notes for rubric levels:

1. No or completely inaccurate example
    - "One task that could require this is to display images."
2. Vague Application
    - Stating "collecting information" without specifying any sources
3. Generic Application
    - "If you want to get information on the reviews people have on average."

Lab 3 - API

Question: Think of one task that would require you to interact with an API. You can look at the examples in the tutorial for inspiration, but try to write down something different.

Examples/notes for rubric levels:

2. Vague Application
    - (bots on website, looking for a specific file/record), "looking for…"
3. Generic Application
    - "I have had to use API for my personal research when getting private information that isn't publicly accessible."
4. Relevant Application
    - "in Excel theres a Capital IQ API to retrieve up to date financial data"
    - "For geolocational data, financial statements"

Question 2: Did students understand challenges and tradeoffs of computational tools in their own fields?

Rubric levels

0. N/A - No answer - Does not apply (OR **explains a solution with plans)**
1. No or completely inaccurate challenges
2. Vague challenges
3. Generic challenges (Uses example from the ebook, or slight variation)
4. Relevant challenges (Uses example not provided in ebook)

Lab 1 - SQL

This question was not provided in the first lab.

Lab 2 - Web Scraping

Question: Discuss your partner's response on Q7a. Can you achieve their task with webscraping? Write down which plans you would need to use, or explain a challenge you would encounter when completing this task.

Examples/notes for rubric levels:

2. Vague Challenges
    - "Yes, would need to scrape the instagram. The people they are following and watching to given the similar people they might interested. I might need good computer to train these data."
        - "Might need good computer" - but does not explain why.
3. Generic Challenges
    - "Yes, would use the same 3 plans from question4. First need to get soup from some URL's then extract info and display it. For heavier projects multiple repetitions of extracting might be necessary."
        - In some projects, 'repeated extractions' is a challenge, but they don't explain what makes this example 'heavy'

Lab 3 - API

Question: For that task, are there any advantages to using one approach over the other?

Examples/notes for rubric levels:

1. No or completely inaccurate challenges

        - "Webscraping is probably better for the task because you get all information rather than one specific request"
            - API can also return all info rather than one page. One request doesn't mean one piece of info
2. Vague Challenges
    - "Might need a good computer"
3. Generic Challenges
    - "An API would be less tedious work"
        - It's not explained what features of this situation makes API less tedious
4. Relevant Challenges
    - "If you were looking at post data for many posts, API might be better due to efficiency and cleanliness, and ease of implementation."
        - "Since we are looking at many posts", API is more efficient