Ox04. UTF-8 Validation

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Weight: 1

Projects(/projects/current)

➡ Project over - took place from Jul 22, 2024 6:00 AM to Jul 26, 2024 6:00 AM

An auto (CA) Rewild hed a local methat keef deard line tions / to review)

? Evaluation quizzes(/dashboards/my_current_evaluation_quizzes)
In a nutshell...

• Auto QA review: 14.0/14 mandatory

• Altogether: 100.0%

Curriculums(/dashboards/my_curriculums)

o Optional: no optional tasks

Concepts(/concepts)

The "Oxone Leffc & Notice lines into jack would ill rocents) of apply your knowledge in bitwise operations, understanding of the UTF-8 encoding scheme, and Python programming skills to validate whether a given dataset represents a valid UTF-8 encoding. Here's a list of concepts and resources that will be selected. Servers (/servers)

Concepts Needed: Sandboxes(/user_containers/current)

1. Bitwise Operations in Python:

Tools (Mashboards) in yet to manipulate bits in Python, including operations like AND (&), OR (\mid), XOR (\land), NOT (\sim), shifts (<< , >>).

Python Bitwise Operators (/rltoken/BslyYNZIXdyxW3 b0WNOcg)

2. UT/fele Encoding Schlease boards/videos)

 Familiarity with the UTF-8 encoding rules, including how characters are encoded into one or more bytes.

• Understanding the patterns that represent a valid UTF-8 encoded character.

Peers Huser Wikipedia (/rltoken/oqFi6P1hNvp9aSuNv---IQ)

• Characters, Symbols, and the Unicode Miracle (/rltoken/d--jVK8sBSlhkosu7pFzdw)

 The Absolute Minimum Every Software Developer Absolutely, Positively Must Know About Discord(https://discord.com/app) Unicode and Character Sets (/rltoken/9EwaXVds22dSK3lvF5nNCA)

3. Data Representation:

- How to represent and work with data at the byte level.
- Handling the least significant bits (LSB) of integers to simulate byte data.

4. List Manipulation in Python:

My Profile(/users/my_profile)

Iterating through lists, accessing list elements, and understanding list comprehensions.







旨

Python Lists (/rltoken/TaN91MgmOL80GeOGvmldlw)

5. Boolean Logic:

(/) Applying logical operations to make decisions within the program.

By studying these concepts and utilizing the resources provided, you will be equipped to tackle the UTFravalidatի Թիթային է, effectively applying bitwise operations and logical reasoning to determine the validity of UTF-8 encoded data.

dditional Resource

Mock Technical Interview (/rltoken/X1IZqipeyegt8pbQ9aXSFQ)
 Projects/current)

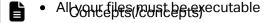
Requirements

QA Reviews I can make(/corrections/to_review)

General

Allowed editors: via ... via ... emacs /my_current_evaluation_quizzes)

- All your files will be interpreted/compiled on Ubuntu 20.04 LTS using python3 (version 3.4.3)
- All your files should end with a new line
- The first line of all your files should be exactly #!/usr/bin/python3
- Curriculums(/dashboards/my, curriculums)
 A README.md file, at the root of the folder of the project, is mandatory
- Your code should use the PEP 8 style (version 1.7.x)



Conference rooms(/dashboards/video_rooms)

Tasks Servers(/servers)

0. UTF-8 Validation

 $\mathbf{\omega}$

mandatory

Sandboxes(/user_containers/current)

Score: 100.0% (Checks completed: 100.0%)

Tools(/dashboards/my_tools)
Write a method that determines if a given data set represents a valid UTF-8 encoding.

• Prototype: def validUTF8(data)

- Return Prue if and dashboards videns ding, else return False
- A character in UTF-8 can be 1 to 4 bytes long
- The data set can contain multiple characters

Discord(https://discord.com/app)

- The data will be represented by a list of integers
- Eachard George Presents 1 byte of data, therefore you only need to handle the 8 least significant
- bits of each integer

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carrie@ubuntu:~/0x04-utf8_validation\$ cat 0-main.py #!/usr/bin/python3 " "(7) Main file for testing Home(/) validUTF8 = __import__('0-validate_utf8').validUTF8 data ±MyreHanning(/planning/me) print(validUTF8(data)) data ₽rppects/projects/cureant)111, 110, 32, 105, 115, 32, 99, 111, 111, 108, 33] print(validUTF8(data)) ✓ data =QA[Reviews] carmaRe(forrections/to review) print(validUTF8(data)) 🧖 carri 🙉 យ៉ាយជាដែលក ក្(រារសមិន(សៀតនិវាស់ថា ដៃខែតំកស់០៥ នៃrrent_evaluation_quizzes) carrie@ubuntu:~/0x04-utf8_validation\$./0-main.py True True Curriculums(/dashboards/my_curriculums) False carrie@ubuntu:~/0x04-utf8_validation\$ Concepts(/concepts) Conference rooms(/dashboards/video_rooms) • GitHub repository: alx-interview • Directory: 0x04-utf8_validation Sandboxes(/user_containers/current)
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