

Assignment for Regular Expressions Basics

Instructions:

Solve the following exercises related to regular expressions in Python.
Write the solution code for each exercise.
Include comments to explain your code where necessary.
Test your functions with sample inputs to ensure correctness.
Write the answers in a Python script file or a Jupyter Notebook.

Exercises:

Email Validation:

Write a Python program to validate an email address using a regular expression. Prompt the user to enter an email address and check if it is valid.

URL Extraction:

Create a regular expression pattern to extract URLs from a given text string. Test it with a sample text containing URLs.

Phone Number Extraction:

Write a Python program that extracts phone numbers from a given text string using a regular expression. Test it with a sample text containing phone numbers in various formats.

Word Boundary Match:

Create a regular expression pattern to match words that start with the letter "a" and end with the letter "t" in a given text string. Test it with a sample text.

Whitespace Removal:

Write a Python program to remove all whitespace characters from a given text string using a regular expression.