1. Python Program to Check if email address valid or not
2. Python program to find files having a particular extension using RegEx
3. Python program to extract IP address from file
4. Python program to check the validity of a Password
5. Categorize Password as Strong or Weak using Regex in Python
6. Python program to read file word by word
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9. Python program to Count the Number of occurrences of a key-value pair in a text file
10. Python | Finding ‘n’ Character Words in a Text File

Here are Python programs for each of the tasks you listed:

### 1. Python Program to Check if an Email Address is Valid or Not

```python

Import re

Def is\_valid\_email(email):

Pattern = r’^[a-zA-Z0-9\_.+-][+@[a-zA-Z0-9-]+\.[a-zA-Z0-9-.]+$](mailto:+@[a-zA-Z0-9-]+\.%5ba-zA-Z0-9-.%5d+$)’

Return re.match(pattern, email) is not None

Email = input(“Enter an email address: “)

If is\_valid\_email(email):

Print(“Valid email address”)

Else:

Print(“Invalid email address”)

```

### 2. Python Program to Find Files Having a Particular Extension Using RegEx

```python

Import os

Import re

Def find\_files\_with\_extension(directory, extension):

Pattern = re.compile(rf’.\*\.{extension}$’)

For root, dirs, files in os.walk(directory):

For file in files:

If pattern.match(file):

Print(os.path.join(root, file))

Directory = input(“Enter directory path: “)

Extension = input(“Enter file extension: “)

Find\_files\_with\_extension(directory, extension)

```

### 3. Python Program to Extract IP Address from a File

```python

Import re

Def extract\_ip\_addresses(filename):

With open(filename, ‘r’) as file:

Content = file.read()

Ips = re.findall(r’\b\d{1,3}\.\d{1,3}\.\d{1,3}\.\d{1,3}\b’, content)

Return ips

Filename = input(“Enter the file name: “)

Ip\_addresses = extract\_ip\_addresses(filename)

Print(“IP Addresses found:”, ip\_addresses)

```

### 4. Python Program to Check the Validity of a Password

```python

Import re

Def is\_valid\_password(password):

Pattern = r’^(?=.\*[a-z])(?=.\*[A-Z])(?=.\*\d)(?=.\*[@$!%\*?&])[A-Za-z\d@$!%\*?&]{8,}$’

Return re.match(pattern, password) is not None

Password = input(“Enter a password: “)

If is\_valid\_password(password):

Print(“Valid password”)

Else:

Print(“Invalid password”)

```

### 5. Categorize Password as Strong or Weak Using Regex in Python

```python

Import re

Def categorize\_password(password):

Strong\_pattern = r’^(?=.\*[a-z])(?=.\*[A-Z])(?=.\*\d)(?=.\*[@$!%\*?&])[A-Za-z\d@$!%\*?&]{8,}$’

If re.match(strong\_pattern, password):

Return “Strong”

Else:

Return “Weak”

Password = input(“Enter a password: “)

Print(“Password is:”, categorize\_password(password))

```

### 6. Python Program to Read File Word by Word

```python

Def read\_file\_word\_by\_word(filename):

With open(filename, ‘r’) as file:

For line in file:

For word in line.split():

Print(word)

Filename = input(“Enter the file name: “)

Read\_file\_word\_by\_word(filename)

```

### 7. Python Program to Read Character by Character from a File

```python

Def read\_file\_character\_by\_character(filename):

With open(filename, ‘r’) as file:

While True:

Char = file.read(1)

If not char:

Break

Print(char, end=’’)

Filename = input(“Enter the file name: “)

Read\_file\_character\_by\_character(filename)

```

### 8. Python Program to Get Number of Characters, Words, Spaces, and Lines in a File

```python

Def file\_statistics(filename):

With open(filename, ‘r’) as file:

Content = file.read()

Num\_chars = len(content)

Num\_words = len(content.split())

Num\_lines = len(content.splitlines())

Num\_spaces = content.count(‘ ‘)

Return num\_chars, num\_words, num\_lines, num\_spaces

Filename = input(“Enter the file name: “)

Chars, words, lines, spaces = file\_statistics(filename)

Print(f”Characters: {chars}, Words: {words}, Lines: {lines}, Spaces: {spaces}”)

```

### 9. Python Program to Count the Number of Occurrences of a Key-Value Pair in a Text File

```python

Def count\_key\_value\_occurrences(filename, key, value):

Count = 0

With open(filename, ‘r’) as file:

For line in file:

If f”{key}: {value}” in line:

Count += 1

Return count

Filename = input(“Enter the file name: “)

Key = input(“Enter the key: “)

Value = input(“Enter the value: “)

Occurrences = count\_key\_value\_occurrences(filename, key, value)

Print(f”Occurrences of {key}: {value} = {occurrences}”)

```

### 10. Python Program to Find ‘n’ Character Words in a Text File

```python

Import re

Def find\_n\_character\_words(filename, n):

With open(filename, ‘r’) as file:

Content = file.read()

Pattern = rf’\b\w{{{n}}}\b’

Words = re.findall(pattern, content)

Return words

Filename = input(“Enter the file name: “)

N = int(input(“Enter the number of characters: “))

Words = find\_n\_character\_words(filename, n)

Print(f”Words with {n} characters:”, words)

```

These programs use Python’s standard libraries such as `os` for file operations and `re` for regular expression matching to accomplish the tasks.