ASSIGNMENT 5 IN PYTHON BY MD RAJ

Q1. Display Line Numbers Write a Python program that reads a file (data.txt) and displays each line with its line number.

```
with open("data.txt","r") as file:
    for line_number,line in enumerate (file,start=1):
        print(f"{line_number}:{line.strip()}")
```

```
# 1:hello it is a sample file handling operation
# 2:hello it is a sample file handling operation
# 3:hello it is a sample file handling operation
# 4:hello it is a sample file handling operation
# 5:hello it is a sample file handling operation
```

line_number is holding the current line_number and line is holding the text in each corresponding line_number.

Q2.Write a program that reads data.txt and counts how many times each unique word appears in the file. Ignore case and punctuation.

```
import string
word_count={}

with open("data.txt","r") as file:
    for line in file:
        line=line.lower()
        line=line.translate(str.maketrans("","",string.punctuation))
        words=line.split()
        for word in words:
            word_count[word]=word_count.get(word,0)+1
for word,count in word_count.items():
    print(f"{word}:{count}")
```

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hello:5

it:5

is:5

a:5

sample:5

file:5

handling:5

operation:5

Q3. Remove Blank and Whitespace-Only Lines Write a Python program that removes all empty lines or lines with only spaces from a file and writes the result into a new file called cleaned_data.txt.

```
with open ("data.txt","r") as file:
    cleaned_lines=[line for line in file if line.strip()!= ""]

with open ("cleaned_data.txt","w") as outfile:
    outfile.writelines(cleaned_lines)

print("Empty lines removed output saved to new file cleaned_Data.txt")
```

Q4. Extract and Count Email Addresses Given a file emails.txt that contains random text and email addresses, write a program to: - Extract all email addresses using regular expressions - Count how many unique emails are found - Display them in alphabetical order.

```
import re

with open("data.txt","r")as file:
    content=file.read()
```

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```
pattern = r'[a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,}'


emails=re.findall(pattern,content)


unique_emais = sorted(set(emails))


print(f"Total unique emails found:{len(unique_emais)}")
print("\n Emails in alphabetical order:")


for email in unique_emais:
    print(email)
```

Q5. Rename All .txt Files in a Folder Write a Python program that renames all .txt files in a given folder by prefixing them with the word processed_. Example: notes.txt becomes processed_notes.txt

```
import os


folder_path =
r"C:\Users\rajmd\OneDrive\Desktop\ASD\Assignments\PYTHON\Assignment5"


for filename in os.listdir(folder_path):
    if filename.endswith(".txt") and not filename.startswith("processed_"):
        old_path = os.path.join(folder_path,filename)
        new_filename = f"processed_{filename}"
        new_path=os.path.join(folder_path,new_filename)


        os.rename(old_path,new_path)
        print(f"Renamed:{filename}->{new_filename}")
```

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```
print("Renaming done")


# Renamed:cleaned_data.txt->processed_cleaned_data.txt
# Renamed:data.txt->processed_data.txt
# Renaming done
```