```python
#Lab Exercise
#1.a)Write a paragraph about introducing you and your selected domain
(include Full Name, domain name, register number, year …….).
#1.a)Write a python program to count the frequency of any specific
word (your domain name) in the paragraph.
def count_word_frequency(paragraph, word):
    paragraph = paragraph.lower()
    words = paragraph.split()
    count = 0
    for w in words:
        if w == word.lower():
            count += 1

    return count

if __name__ == "__main__":
    intro_paragraph = """
    My name is Alwin Tomy reg.no: 2347207, pursuing MCA for the
academic year 2023-24.
    The domain I chose for Python lab is Music Streaming Service.
    """

    word_to_find = "python"

    frequency = count_word_frequency(intro_paragraph, word_to_find)
    print(intro_paragraph)

    print(f"The word '{word_to_find}' appears {frequency} times in the
paragraph.")
```

```
    My name is Alwin Tomy reg.no: 2347207, pursuing MCA for the
academic year 2023-24.
    The domain I chose for Python lab is Music Streaming Service.

The word 'python' appears 1 times in the paragraph.
```

```python
# Write a python program to display all the datatypes of selected
specific elemenst in a paragraph

def get_data_type(element):
    try:
        int(element)
        return "int"
    except ValueError:
        try:
            float(element)
            return "float"
        except ValueError:
            return "string"
```

```
def main():
    paragraph = """
    My name is Alwin Tomy reg.no: 2347207, pursuing MCA for the
academic year 2023-24.
    The domain I chose for Python lab is Music Streaming Service.
    """
    words = "".join(e for e in paragraph if e.isalnum() or
e.isspace()).split()

    for word in words:
        data_type = get_data_type(word)
        print(f"{word} - {data_type}")

main()
```

```
My - string
name - string
is - string
Alwin - string
Tomy - string
regno - string
2347207 - int
pursuing - string
MCA - string
for - string
the - string
academic - string
year - string
202324 - int
The - string
domain - string
I - string
chose - string
for - string
Python - string
lab - string
is - string
Music - string
Streaming - string
Service - string
```

```
#Write a python program to count the number of alphabets, numeric and
other special symbols in the paragraph.
def count_characters(paragraph):
    alphabet_count = 0
    numeric_count = 0
    special_count = 0

    for char in paragraph:
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        if char.isalpha():
            alphabet_count += 1
        elif char.isdigit():
            numeric_count += 1
        else:
            special_count += 1

    return alphabet_count, numeric_count, special_count

def main():
    intro_paragraph = """
    My name is Alwin Tomy reg.no: 2347207, pursuing MCA for the
academic year 2023-24.
    The domain I chose for Python lab is Music Streaming Service.
    """

    print("Paragraph:")
    print(intro_paragraph)

    alphabet_count, numeric_count, special_count =
count_characters(intro_paragraph)

    print("\nCharacter Counts:")
    print(f"Alphabets: {alphabet_count}")
    print(f"Numerics: {numeric_count}")
    print(f"Special Symbols: {special_count}")

main()
```

```
Paragraph:

    My name is Alwin Tomy reg.no: 2347207, pursuing MCA for the
academic year 2023-24.
    The domain I chose for Python lab is Music Streaming Service.


Character Counts:
Alphabets: 101
Numerics: 13
Special Symbols: 44
```

```
#Create a Set with elements that consists of various data types (int,
float, string, Boolean, etc. from your domain)
#and perform the functions pop(), clear(), discard() and del. Write
the insights as docstring.

def set_operations_example():
    data_set = {1000, 2022, "UserId", True, "Username ", 4.75}

    print("Original Set:", data_set)
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    popped_element = data_set.pop()
    print(f"Element popped using pop(): {popped_element}, New Set:
{data_set}")

    data_set.clear()
    print("Set after clear():", data_set)

    data_set = {1000, 2022, "UserId", True, "Username ", 4.75}
    data_set.discard(2022)
    print("Set after discarding '2022':", data_set)

    del data_set
    try:
        print("Set after deleting:", data_set)
    except NameError:
        print("The set 'data_set' no longer exists.")

set_operations_example()
```

```
Original Set: {True, 4.75, 'Username ', 2022, 1000, 'UserId'}
Element popped using pop(): True, New Set: {4.75, 'Username ', 2022,
1000, 'UserId'}
Set after clear(): set()
Set after discarding '2022': {True, 4.75, 'Username ', 1000, 'UserId'}
The set 'data_set' no longer exists.
```

```
# Update the Set with minimum 5 string attributes of your domain and
arrange the Set in descending order.
music_streaming_service = {"UserID", "Artist", 10, "Genre"}
print(music_streaming_service)
music_streaming_service.update(["Time","Likes", "Followers"])
print(music_streaming_service)
```

```
{'UserID', 10, 'Artist', 'Genre'}
{'Likes', 10, 'UserID', 'Followers', 'Time', 'Genre', 'Artist'}
```

```
# arrange the Set in descending order.
def music_streaming_service_demo():
    music_streaming_service = {"UserId", "Artist", "Followers",
"Genre", "Likes"}
    print("Initial set:", music_streaming_service)
    descending_set = sorted(music_streaming_service, reverse=True)
    print("\nSet in descending order:", descending_set)

music_streaming_service_demo()
```

```
Initial set: {'Followers', 'Genre', 'Likes', 'Artist', 'UserId'}

Set in descending order: ['UserId', 'Likes', 'Genre', 'Followers',
'Artist']
```

```python
 #Create a Tuple and Execute the packing and unpacking operations of tuples using the attributes of your domain.

def tuple_operations_example():
    user_data = ("UserId123", "alwintomy11@gmail.com", "password123", "Artist001", "Pop")
    (user_id, email, password, artist_id, genre) = user_data

    print("Unpacked Variables:")
    print(f"User ID: {user_id}")
    print(f"Email: {email}")
    print(f"Password: {password}")
    print(f"Artist ID: {artist_id}")
    print(f"Genre: {genre}")

tuple_operations_example()
```

```
Unpacked Variables:
User ID: UserId123
Email: alwintomy11.com
Password: password123
Artist ID: Artist001
Genre: Pop
```

```python
 #Create a Tuple and Execute the packing and unpacking operations of tuples using the attributes of your domain.

def count_characters(domain, character):
    return domain.count(character)

def main():
    domain_name = "Music Streaming Service"
    characters = ['M', 'u', 's', 'i', 'c', ' ', 'S', 't', 'r', 'e', 'a', 'm', 'i', 'n', 'g', ' ', 'S', 'e', 'r', 'v', 'i', 'c', 'e']

    for char in characters:
        count = count_characters(domain_name, char)
        print(f"Count of '{char}' = {count}")
main()
```

```
Count of 'M' = 1
Count of 'u' = 1
Count of 's' = 1
Count of 'i' = 3
Count of 'c' = 2
Count of ' ' = 2
Count of 'S' = 2
Count of 't' = 1
Count of 'r' = 2
Count of 'e' = 3
```

```
Count of 'a' = 1
Count of 'm' = 1
Count of 'i' = 3
Count of 'n' = 1
Count of 'g' = 1
Count of ' ' = 2
Count of 'S' = 2
Count of 'e' = 3
Count of 'r' = 2
Count of 'v' = 1
Count of 'i' = 3
Count of 'c' = 2
Count of 'e' = 3
```

```
# Enter your domain name, execute all the slicing possibilities and
also negative indexing.

def main():
    domain_name = "Music Streaming Service"

    print("Original String:", domain_name)
    print("Substring from index 0 to 4:", domain_name[0:5])
    print("Substring from index 6 to 15:", domain_name[6:16])
    print("Every second character:", domain_name[::2])
    print("Reverse the string:", domain_name[::-1])

    print("Last character using negative index:", domain_name[-1])
    print("Second last character using negative index:", domain_name[-
2])
    print("Substring from -7 to -1 using negative index:",
domain_name[-7:])

main()
```

```
Original String: Music Streaming Service
Substring from index 0 to 4: Music
Substring from index 6 to 15: Streaming
Every second character: MscSraigSrie
Reverse the string: ecivreS gnimaertS cisuM
Last character using negative index: e
Second last character using negative index: c
Substring from -7 to -1 using negative index: Service
```