Class Exercise:

List

You have been hired as a data analyst at a company that specializes in analyzing social media data. Your task is to write a Python program that performs various operations on a list of tweets. The program should allow you to filter and analyze the tweets based on certain criteria. Your task is to implement the following features:

1. Create an empty list to store the tweets.
2. Use a while loop to keep the program running until the user chooses to quit.
3. Display the menu options to the user: "Add tweet", "Filter tweets", "Analyze tweets", and "Quit".
4. Use if-else statements to execute the corresponding operation based on the user's choice.
5. For the "Add tweet" option, prompt the user to enter a tweet and add it to the list.
6. For the "Filter tweets" option, prompt the user to enter a keyword and display only the tweets that contain that keyword.
7. For the "Analyze tweets" option, calculate and display the average length of the tweets in the list.
8. If the user enters an invalid choice, display an error message.

Remember to use list operations and methods, while and for loops, if and else operators, and functions to implement this program.

def display\_menu():

# Your code here

def add\_tweet(tweets):

# Your code here

def filter\_tweets(tweets):

# Your code here

def analyze\_tweets(tweets):

# Your code here

tweets = []

choice = 0

while choice != 4:

# Your code here

Menu Options:

1. Add tweet

2. Filter tweets

3. Analyze tweets

4. Quit

Enter your choice (1-4): 1

Enter the tweet: Excited for the upcoming event!

Tweet added successfully!

Menu Options:

1. Add tweet

2. Filter tweets

3. Analyze tweets

4. Quit

Enter your choice (1-4): 1

Enter the tweet: Enjoying a beautiful day at the beach.

Tweet added successfully!

Menu Options:

1. Add tweet

2. Filter tweets

3. Analyze tweets

4. Quit

Enter your choice (1-4): 1

Enter the tweet: Having dinner with friends tonight.

Tweet added successfully!

Menu Options:

1. Add tweet

2. Filter tweets

3. Analyze tweets

4. Quit

Enter your choice (1-4): 2

Enter the keyword to filter tweets: beach

Filtered tweets:

Enjoying a beautiful day at the beach.

Menu Options:

1. Add tweet

2. Filter tweets

3. Analyze tweets

4. Quit

Enter your choice (1-4): 3

Average tweet length: 36.00 characters

Menu Options:

1. Add tweet

2. Filter tweets

3. Analyze tweets

4. Quit

Enter your choice (1-4): 4

Goodbye!