1. **(25 Points)** Write a complete, working Python 3 program called euidA.py (where “euid” is your EUID) that does the following:

* Write your EUID in comments at the top of the file.
* Define a user-defined function called find\_fixed() that accepts two arguments, a list of strings called word\_list and an integer for the average word length called avg\_length. Inside the function:
  + Iterate through word\_list and discard any word whose length is not equal to avg\_length, being sure to print out the discarded word. All other words equal to avg\_length shall be added to a new list variable called new\_list.
  + Join the list of strings in new\_list together as a single string, using a space as the separator, and assign to the string variable called new\_str.
  + Return new\_str back to the calling function.
* Inside the main part of the program:
  + Prompt for and read in a phrase as a string, without punctuation.
  + Initialize two integral variables my\_sum and num\_words to 0.
  + Split the phrase string into a list of strings, using a space as the separator, and assign to the list variable called word\_list.
  + Iterate through word\_list to keep track of the number of words in num\_words and the sum of characters in my\_sum of all of the words in word\_list.
  + Use my\_sum and num\_words to compute the average length of each word, rounded down to the integer, and assign to the variable avg\_length. For example, an average length of 5.5 would still be rounded down to 5.
  + Call the find\_fixed() function, passing in the list of words called word\_list and avg\_length, assigning the returned string to a variable called new\_str.
  + Print a meaningful message with the average word length and the returned string containing words that are avg\_length long.
* You may assume the user enters all elements using the appropriate data type. Due to time constraints, no further comments are required.

Here is a sample output to help you write the code. The items in bold are entered by the user.

$ **python3 mat0299A.py**

Enter a phrase: **the quick brown fox jumped over the lazy dog**

Discarded word: the

Discarded word: quick

Discarded word: brown

Discarded word: fox

Discarded word: jumped

Discarded word: the

Discarded word: dog

Average 4 letter word string: over lazy

1. **(25 Points)** Write a complete, working Python 3 program called euidB.py (where “euid” is your EUID) that does the following:

* Write your EUID in comments at the top of the file.
* Define a user-defined function called secret\_message() that accepts two arguments, the first one a list of random numbers between 32 and 126, and the second one a string variable called space with a default value of '-'. Inside the function:
  + Iterate through the list of random numbers as follows:
    - The random numbers between 32 and 126, inclusively, represent the ASCII values of characters. Convert the random number to a character.
    - Then, if it is an alphabetic or numeric character, add it to a new string variable called new\_str. If it is a single space, add the space variable to the new string variable called new\_str. Otherwise, for any other character, print a message that it is being discarded, being sure to include the character that is discarded.
  + Outside of the loop, print the secret message (i.e., print new\_str).
* Inside the main part of the program:
  + Use a loop of your choice to generate 10 random numbers between 32 and 126, inclusively, and add them to a new list called my\_list. These numbers represent the ASCII values of printable characters.
  + Print the list my\_list.
  + Now, prompt for and read in a single character string on whether or not the user wants to enter a value for the space character. If the response is 'Y' exactly, you will then prompt the user to enter a single replacement character for the space character and assign the result to a single character string called ch. Then, call the secret\_message() function, passing in my\_list and ch. Otherwise, if anything but 'Y' was entered, simply call the secret\_message() function, passing in only my\_list.
* You may assume the user enters all elements using the appropriate data type. Due to time constraints, no further comments are required.

Here is a sample output to help you write the code. The items in bold are entered by the user.

$ **python3 mat0299B.py**

[120, 62, 93, 83, 103, 121, 113, 38, 102, 32]

Do you want to enter a value for space character? (Y/N) **Y**

Enter a single character: **X**

Discarding >

Discarding ]

Discarding &

Secret message: xSgyqfX

$ **python3 mat0299B.py**

[38, 116, 42, 86, 116, 32, 79, 104, 103, 99]

Do you want to enter a value for space character? (Y/N) **N**

Discarding &

Discarding \*

Secret message: tVt-Ohgc