



# ENGR 102 - LAB ASSIGNMENT #7B

Fall 2019

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You are to write the following program as described below. For all programs, include comments in your code that describe the purpose of individual blocks. Remember the appropriate header information.

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## Program 1: Li-Lists-sts

- ☑ *Use for and/or while looping structures in Python as appropriate*
- ☑ *Use lists-of-lists to store and manipulate data.*

Find the list in a list-of-lists whose sum of elements is the highest, and print the sum and list to the user.

e.g., `[[1, 2], [2, 5], [3, 2]]` → `[2,5]` with a sum of 7.

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## Program 2: Pig Latin

- ☑ *Use list operations and looping structures on strings*

“Pig Latin” is a way of converting words in standard English to similar words that sound different:

- If a word starts with a consonant, move the consonants to the end of the word, and add “ay” to the end.  
e.g. “computer” becomes “omputercay”
- If a word starts with a vowel, add “yay” on to the end of the word. Treat ‘y’ as a vowel for this assignment.  
e.g. “engineering” becomes “engineeringyay”

Write a program that repeatedly reads in a word from a user and converts it to Pig Latin. The program should continue reading words until the user enters “stop”.

*Challenge (optional, for glory only):*

Try to write a program where, instead of just one word, the user enters an entire sentence, and all words in the sentence are converted to Pig Latin.

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## Program 3: GPA Calculation:

- ☑ *Use for and/or while looping structures and conditional statements in Python*

Write a program that asks a user how many classes they are taking this term, the name of each class, the credit hours for each class, and their final letter grade for each class, and then calculates their term GPA. Use either a list for each course, or a single list-of-lists. The grading system and examples can be found on the TAMU website:

<http://registrar.tamu.edu/Transcripts-Grades/How-to-Calculate-GPA>