

Tier 2 (Intermediate)

1. Given a string input as a sentence, print out the following:

- a) Most common character. (E.g. "Random test", would return 't')
- b) Count the number of upper/lower case letters in the string

2. Given a string `s` consists of upper/lower-case alphabets and empty space characters ' ', return the length of last word in the string. If the last word does not exist, return 0. Note: A word is defined as a character sequence consists of non-space characters only.

Example:

Input: "Hello World"

Output: 5

3. Write a program that takes a number (1-100) and determines whether this is a product of two Prime numbers. If yes, print the two Prime numbers, otherwise print a "try again" message. Allow the user 3 tries.

4. Write a guessing game where the user has to guess the secret number. After every guess the program tells the user whether their number was too large or too small. When a certain number of tries are reached, the secret number must be outputted. If a number is guessed multiple times then it counts as one guess

5. Write a program that takes in a string and determines whether this string is a Palindrome. A Palindrome is a word that reads the same forward and backward (e.g. level).

6. A palindromic number reads the same both ways. The largest palindrome made from the product of two 2-digit numbers is $9009 = 91 \times 99$. Find the largest palindrome made from the product of two 3-digit numbers

7. Write a program that takes a number as an input and outputs the following:

- a) All the numbers in the Fibonacci series leading up to this input number
- b) All the Prime number occurrences leading up to this input number

8. A person needs to travel in a car a certain distance, from point A to point B. They will leave from point A at 10 a.m. and need to reach point B before noon. The speed they can travel depends on the weather, refer to table below:

Weather	Speed (Km/h)	Percentage Distance Covered
1) Snowy	40	100%
2) Rainy	40	25%
	60	75%
3) Cloudy	60	40%
	100	60%
4) Sunny	100	100%

Write a program that will take two input values: 1) Distance to travel in Km, and 2) type of weather.

The output will let the user know whether they can make it to their destination before noon.