**Programming Exercises**

1. Write a python program that ask the user to enter two matrices through keyboard and then print their sum.
2. Use a dictionary to count the frequency of letters in the input string. Only letters should be counted, not black spaces, numbers, or punctuation. Upper case should be considered the same as lower case. For example, counter\_letters("This is a sentence.") should return {"t":2,"h":1,"i":2,"s":3,"a":1,"e":3,"n":2,"c":1}.

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1. Write a Python program that ask the user to enter the content of two square matrices from the keyboard and then print their summation.

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1. Write a raspberry pi program to blink the lamp connected at GPIO pin 26. The LED should continue to blink unless you press Ctrl+C .

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1. Write a raspberry pi program to blink 50 times the LED connected at GPIO pin 18 and then stop if the Push\_Button connected to the GPIO pin 12 is pressed. The interval on state and off state should be 2 seconds. Please draw the circuit diagram of the system.

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1. A raspberry pi employs switch\_A and Switch\_B connected to GPIO pin 16 and 18 respectively for controlling a Light Emitting Diode connected at GPIO pin 12. If the switch\_A is pressed the program terminates completely. However, If the switch\_A is not pressed and the switch\_B is pressed the program turn on the LED and wait one second. Moreover, if the switch\_B is released the program turns off the LED as long as the switch\_A is still open. Write a raspberry pi python program to implement the suggested algorithm.

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1. Write a raspberry pi program to switch on the lamp connected GPIO pin of raspberry pi if light sensor(LDR) used as input to raspberry detects the darkness and off if it detects the brightness. Please provide the circuit diagram.