

PYTHON PROGRAMMING LAB**Exercise 1 - Basics**

- a) Running instructions in Interactive interpreter and a Python Script
- b) Write a program to purposefully raise Indentation Error and Correct it

Exercise 2 - Operations

- a) Write a program to compute distance between two points taking input from the user (Pythagorean Theorem)
- b) Write a program add.py that takes 2 numbers as command line arguments and prints its sum.

Exercise - 3 Control Flow

- a) Write a Program for checking whether the given number is a even number or not.
- b) Using a for loop, write a program that prints out the decimal equivalents of $1/2$, $1/3$, $1/4$, . . . , $1/10$
- c) Write a program using a for loop that loops over a sequence. What is sequence ?
- d) Write a program using a while loop that asks the user for a number, and prints a countdown from that number to zero.

Exercise 4 - Control Flow - Continued

- a) Find the sum of all the primes below two million.
Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be:
1, 2, 3, 5, 8, 13, 21, 34, 55, 89, ...
- b) By considering the terms in the Fibonacci sequence whose values do not exceed four million, find the sum of the even-valued terms.

Exercise - 5 - DS

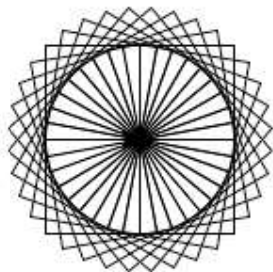
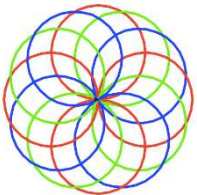
- a) Write a program to count the numbers of characters in the string and store them in a dictionary data structure
- b) Write a program to use split and join methods in the string and trace a birthday with a dictionary data structure.

Exercise - 6 DS - Continued

- a) Write a program combine_lists that combines these lists into a dictionary.
- b) Write a program to count frequency of characters in a given file. Can you use character frequency to tell whether the given file is a Python program file, C program file or a text file?

Exercise - 7 Files

- a) Write a program to print each line of a file in reverse order.
- b) Write a program to compute the number of characters, words and lines in a file.



Exercise - 15 - Testing

- a) Write a test-case to check the function `even_numbers` which return True on passing a list of all even numbers
- b) Write a test-case to check the function `reverse_string` which returns the reversed string

Exercise - 16 - Advanced

- a) Build any one classical data structure.
- b) Write a program to solve knapsack problem.