FPT Software

FRESHER ACADEMY

AI Fresher

Assignment 1

Python for Data Science 1

Viet Tran

VERSION 1.0

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EXERCISE 01 (SHORT)

Write a program to list all numbers that are divisible by 5 not divisible 13, between 1900 and 2030 (both included).

All numbers are displayed in a comma-separated sequence on a single line.

EXERCISE 02 (SHORT)

Find and print the min and max of (20, 18, 23, 4, 8, 3, 19, 16, 45, 25)

EXERCISE 03 (SHORT)

Find all square numbers smaller than 2030

EXERCISE 04 (SHORT)

Write a program to display 'Fresher Academy' as a capitalized string and 'data science' as a titled string

EXERCISE 05 (SHORT)

Find and print out even numbers in (20, 18, 23, 4, 8, 3, 19, 16, 45, 25). Finally, print the sum of these even numbers

EXERCISE 06 (SHORT)

Write a program to replace 'a' by '@', 'e' by '3' in 'Fresher Academy'. Print the converted string

EXERCISE 07 (SHORT)

Write a program to calculate the sum of powers of 2 which are smaller than 200

EXERCISE 08 (SHORT)

Write a program to find all factor numbers of 2020

EXERCISE 09 (MEDIUM)

Write a program to use the bubble sort algorithm to sort [20, 18, 45, 25, 23, 4, 8, 3, 19, 16]. Print the output of each step

EXERCISE 10 (MEDIUM)

Write a program to use the insertion sort algorithm to sort [20, 18, 45, 25, 23, 4, 8, 3, 19, 16]. Print the output of each step

EXERCISE 11 (MEDIUM)

Write a program to revert 'Fresher Academy' to 'ymedacA rehserF'

EXERCISE 12 (MEDIUM)

Write a program to revert 'Fresher Academy' to 'Academy Fresher'

EXERCISE 13 (MEDIUM)

Write a program to find and print all prime number smaller than 100

EXERCISE 14 (MEDIUM)

Write a program to find and print all Fibonacci number smaller than 100

EXERCISE 15 (MEDIUM)

Write a program to calculate mean and median of (20, 18, 23, 4, 8, 7, 3, 19, 16, 45, 25)

EXERCISE 16 (MEDIUM)

Write a program to check true if a string contains only A-Z, a-z, 0-9. For example 'Fresher @cademy' is false

EXERCISE 17 (LONG)

Write a program to sort ascending strings ('fresher', 'academy', 'science', 'data', 'study') as sum of all letter ASCII codes. For instance, 'az' (219) is larger than 'bp'.

EXERCISE 18 (LONG)

Write a program to find the top three most appearance letters in string 'Fresher Academy Data Science' and skip case sensitive

EXERCISE 19 (LONG)

Write a program to check if a string ('fresher') is an anagram of another string ('refresh') or not without using the sort() method of List

EXERCISE 20 (LONG)

Write a program to generate a random password having two special characters of '!@#$%^&*', two digits 0-9, three characters A-Z and three characters a-z