DEPARTMENT OF COMPUTER APPLICATIONS
PSG COLLEGE OF TECHNOLOGY
Joy of Programming using Python
PRACTICE PROGRAMS

Bridge Course

1. Write a Python program to compute the distance between the points (x1, y1) and (x2, y2)

2. Write a Python program to sum the three given integers. However, if two values are equal sum will be zero.
   Input : 2 2 1 Output : 0
   Input : 2 3 4 Output : 9

3. Write a python program to print all numbers in a range 700 to 900 (inclusive) divisible by a given number from user.
4. Write a Python program to check whether a specified value is contained in a group of values.
5. Write a python program to read three numbers (a,b,c) and check how many numbers between ‘a’ and ‘b’ are divisible by ‘c’.

6. Write a Python program to create a histogram from a given list of integers.
   Input : Character to pint : $
   Format to print : 4162
   Output :
   $$$$
   $
   $$$$$$
   $$

7. Given three sides a,b,c find if the area of the triangle. Also determine if the triangle is isosceles, equilateral or scalene triangle.

8. Write a Python program to sort three integers without using conditional statements and loops
9. Aakash is looking for his dream job, but has some restrictions. He loves California and would take a job there if it paid over 40,000 a year. He hates Massachusetts and demands at least 100,000 to work there. Any other place he’s content to work for 60,000 a year, unless he can work in space in which case he would work for free. Write a program to shows his basic strategy for accepting a job offer
10. Write a python program to accept a number and find the sum of its digits.

11. Write a python program to print if a number is prime or not.

12. Write a program that accepts an integer (n) and computes the value of n+nn+nnn.
13. Write a Python program to find the number of notes (Sample of notes: 10, 20, 50, 100, 200 , 500, 2000) against an given amount.

14. Write a Python program to construct the following pattern, using a nested for loop.

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*
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* * *
* * * *
* * * * *
* * * *
* * *
* *
*
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15. Write a Python program to compute the amount of the debt in n months. The borrowing amount is Rs.100,000 and the loan adds 5% interest of the debt and rounds it to the nearest 1,000 above month by month.
16. Write a program to form an integer that has the number of digits at the ten's place and the least significant digit in the one's place.

    Enter the number:129

    The new number formed: 39
17. There are two circles C1 with radius r1, central coordinate (x1, y1) and C2 with radius r2 and central coordinate (x2, y2)

    Write a Python program to test the following condition:

    - "C2 is in C1" if C2 is in C1
    - "C1 is in C2" if C1 is in C2
    - "Circumference of C1 and C2 intersect" if circumference of C1 and C2 intersect, and
    - "C1 and C2 do not overlap" if C1 and C2 do not overlap.

    Input : x1, y1, r1, x2, y2, r2: 5 6 4 8 7 9

    Output: C1 is in C2

18. Write a Python program to find out, if the given number is abundant.

    Note: In number theory, an abundant number or excessive number is a number for which the sum of its proper divisors is greater than the number itself. The integer 12 is the first abundant number. Its proper divisors are 1, 2, 3, 4 and 6 for a total of 16.

19. Write a Python program to print all even numbers from a given numbers list in the same order and stop printing if any numbers that come after 237 in the sequence.

    Input :

    numbers = [386, 462, 47, 418, 907, 344, 236, 375, 823, 566, 597, 978, 328, 615, 953, 345, 399, 162, 758, 219, 918, 237, 412, 566, 826, 248, 866, 950, 626, 949, 687, 217]

    output :list= [386, 462, 47, 418, 907, 344, 236, 375, 823, 566, 597, 978, 328, 615, 953, 345, 399, 162, 758, 219, 918]

20. Write a program to find a distinct pair of numbers whose product is odd from a sequence of integer values.
21. Write a Python program to create all possible strings by using 'a', 'e', 'i', 'o', 'u'. Use the characters exactly once.
22. Write a Python program to reverse only the vowels of a given string.
23. Write a Python program to add 'ing' at the end of a given string (length should be at least 3). If the given string already ends with 'ing' then add 'ly' instead. If the string length of the given string is less than 3, leave it unchanged.

    Case 1 Input: drink
    Expected Result: drinking
    Case 2 Input: sparing
    Expected Result: sparingly

24. Write a Python program which reads a text (only alphabetical characters and spaces.) and prints two words. The first one is the word which is arise most frequently in the text. The second one is the word which has the maximum number of letters.

    A text is given with following condition:

    a. The number of letters in the text is less than or equal to 100.

    b. The number of letters in a word is less than or equal to 20.

    c. There is only one word which is arise most frequently in given text.

    d. There is only one word which has the maximum number of letters in given text.

    Input: Thank you for your comment and your participation.

    Output: your participation

25. When character are consecutive in a string , it is possible to shorten the character string by replacing the character with a certain rule. For example, in the case of the character string YYYYY, if it is expressed as # 5 Y, it is compressed by one character.

    Write a Python program to restore the original string by entering the compressed string with this rule. However, the # character does not appear in the restored character string

    Note: The original sentences are uppercase letters, lowercase letters, numbers, symbols, less than 100 letters, and consecutive letters are not more than 9 letters.

    Input: XY#6Z1#4023

    Output :XYZZZZZZ1000023

    Input: #39+1=1#30

    output :999+1=1000

26. Write a Python program to print a set containing all the colors from color_list_1 which are not present in color_list_2.

27. Write a Python program to find the first appearance of the substring 'not' and 'poor' from a given string, if 'not' follows the 'poor', replace the whole 'not'...'poor' substring with 'good'. Return the resulting string.
    Input: The lyrics is not that poor!
    Output : The lyrics is good!
28. Write a Python program to count the number of strings where the string length is 2 or more and the first and last character are same from a given list of strings.
29. Write a Python program that takes a string and encode it that the amount of symbols would be represented by integer and the symbol.
    For example, the string "AAAABBBCCDAAA" would be encoded as "4A3B2C1D3A"
30. Reverse words in a given string
    Input : ‘this is pretty’
    Output: ‘sihtsiytterp’