**Python in Depth ( if-else, loop problems)**

**Note :-** Do not use any built-in functions of python (eg. Sum, min, max, eval, etc.)

1. Program to find quotient and remainder
2. Program to print the sum of digits of any number
3. Program to print product of digits of any number
4. Program to convert a binary number to a decimal number
5. Program to find the sum of numbers entered
6. Multiply two positive numbers without using \* operator
7. Find the sum of this series up to n terms – 1 + 2 + 4 + 7 + 11 + 16 + ……..
8. Program to generate Fibonacci series
9. Program to print Armstrong numbers
10. Program to find the sum of digits of a number until the sum is reduced to 1 digit
11. Program to find whether a number is prime or not
12. Program to find the sum and average of 10 positive integers
13. Program to perform arithmetic calculations on integers
14. Program to find whether the alphabet is a vowel or consonant
15. Program to check whether a date is valid or not
16. Program to get difference of two dates in years, months days
17. Program to find LCM and HCF of two numbers
18. Program to print numbers from 1 t0 80 separated by tab, 8 numbers per line.
19. Write a Program to input 10 numbers and find the largest number.
20. Write a program to input 10 numbers ranging from 1 to 50 and draw a histogram by displaying adjacent ‘=’ signs for each number entered. For example if the number entered is 12 then a line of 12 equal to signs should be displayed.
21. Write a program to print all prime numbers from 1 to n.
22. Write a program to enter a number and find the reverse of that number. Also display the double of the reverse number. (don’t use string magic)
23. Write a program to find a number is palindrome or not.
24. Write a program to display all four digit palindromes.
25. Write a program to input a number and count the digits in it. Use while loop and the program should work correctly for 0 also.
26. Input a number and a digit, and count the number of times the digit occurs in the number.(don’t use count function or string)
27. Write a program to accept any number n and print the sum of square of all numbers from 1 to n.
28. Write a program to accept any number n and print the cube of all numbers from 1 to n which are divisible by 3. Rewrite the program using a continue statement.
29. Write a program to find out the value of x raised to the power y, where x and y are positive integers.
30. Write a program to find out the value of x raised to the power y, where x and y are positive integers.
31. Write a program to enter a number and test whether it is a Fibonacci number or not.
32. Write a program to read roll number and marks of 10 students in 3 subjects. The valid range for roll number is 1000-9999, if the roll number entered is not in this range, the user should be asked to enter again. Calculate total marks of only those students who get more than or equal to 40 marks in each subject. Count the number of students whose total is more than 200. Print the roll number of the students who gets the highest total.
33. Write a program that inputs an integer n and displays an n-by-n checkerboard pattern. If the value of n is 5, the pattern would be –

* \* \* \* \* \*
* \* \* \* \* \*
* \* \* \* \* \*
* \* \* \* \* \*
* \* \* \* \* \*

1. Print Those Patterns in Python

