**List of programs on Loops and Conditional Statements**

**1.** Write a Python program to find those numbers which are divisible by 7 and multiple of 5, between 1500 and 2700 (both included). 

**2.**Write a Python program to convert temperatures to and from celsius, fahrenheit.   
[ Formula : c/5 = f-32/9 [ where c = temperature in celsius and f = temperature in fahrenheit ]   
*Expected Output* :   
60°C is 140 in Fahrenheit  
45°F is 7 in Celsius 

**3.**Write a Python program to guess a number between 1 to 9.   
Note : User is prompted to enter a guess. If the user guesses wrong then the prompt appears again until the guess is correct, on successful guess, user will get a "Well guessed!" message, and the program will exit.

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

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**5.** Write a Python program that accepts a word from the user and reverse it. 

**6.** Write a Python program to count the number of even and odd numbers from a series of numbers.   
*Sample numbers* : numbers = (1, 2, 3, 4, 5, 6, 7, 8, 9)   
*Expected Output* :   
Number of even numbers : 5  
Number of odd numbers : 4

**7.** Write a Python program that prints each item and its corresponding type from the following list.  
*Sample List* : datalist = [1452, 11.23, 1+2j, True, 'w3resource', (0, -1), [5, 12], {"class":'V', "section":'A'}]

**8.** Write a Python program that prints all the numbers from 0 to 6 except 3 and 6.  
Note : Use 'continue' statement.   
Expected Output : 0 1 2 4 5 

**9.** Write a Python program to get the Fibonacci series between 0 to 50.   
Note : The Fibonacci Sequence is the series of numbers :  
0, 1, 1, 2, 3, 5, 8, 13, 21, ....   
Every next number is found by adding up the two numbers before it.  
Expected Output : 1 1 2 3 5 8 13 21 34

**10.** Write a Python program which iterates the integers from 1 to 50. For multiples of three print "Fizz" instead of the number and for the multiples of five print "Buzz". For numbers which are multiples of both three and five print "FizzBuzz".  
*Sample Output* :   
fizzbuzz  
1  
2  
fizz  
4   
buzz

**11.**Write a Python program which takes two digits m (row) and n (column) as input and generates a two-dimensional array. The element value in the i-th row and j-th column of the array should be i\*j.   
Note :  
i = 0,1.., m-1   
j = 0,1, n-1.

Test Data : Rows = 3, Columns = 4   
Expected Result : [[0, 0, 0, 0], [0, 1, 2, 3], [0, 2, 4, 6]]

**12.**Write a Python program that accepts a sequence of lines (blank line to terminate) as input and prints the lines as output (all characters in lower case). 

**13.**Write a Python program which accepts a sequence of comma separated 4 digit binary numbers as its input and print the numbers that are divisible by 5 in a comma separated sequence.   
Sample Data : 0100,0011,1010,1001,1100,1001  
Expected Output : 1010

**14.**Write a Python program that accepts a string and calculate the number of digits and letters.   
Sample Data : Python 3.2  
Expected Output :  
Letters 6   
Digits 2

**15.**Write a Python program to check the validity of password input by users.   
Validation :

* At least 1 letter between [a-z] and 1 letter between [A-Z].
* At least 1 number between [0-9].
* At least 1 character from [$#@].
* Minimum length 6 characters.
* Maximum length 16 characters.

**16.**Write a Python program to find numbers between 100 and 400 (both included) where each digit of a number is an even number. The numbers obtained should be printed in a comma-separated sequence.

**17.**Write a Python program to print alphabet pattern 'A'.  
*Expected Output:*

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**18.**Write a Python program to print alphabet pattern 'D'.  
*Expected Output:*

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**19.**Write a Python program to print alphabet pattern 'E'.  
*Expected Output:*

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**20.**Write a Python program to print alphabet pattern 'G'.  
*Expected Output:*

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**21.**Write a Python program to print alphabet pattern 'L'.  
*Expected Output:*

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**22.**Write a Python program to print alphabet pattern 'M'.  
*Expected Output:*

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**23.**Write a Python program to print alphabet pattern 'O'.  
*Expected Output:*

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**24.**Write a Python program to print alphabet pattern 'P'.  
*Expected Output:*

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**25.**Write a Python program to print alphabet pattern 'R'.  
*Expected Output:*

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**26.**Write a Python program to print the following patterns.   
*Expected Output:*

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27. Write a Python program to print alphabet pattern 'T'.  
*Expected Output:*

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**28.**Write a Python program to print alphabet pattern 'U'.  
*Expected Output:*

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**29.**Write a Python program to print alphabet pattern 'X'.  
*Expected Output:*

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**30.**Write a Python program to print alphabet pattern 'Z'.   
*Expected Output:*

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**31.**Write a Python program to calculate a dog's age in dog's years.   
Note: For the first two years, a dog year is equal to 10.5 human years. After that, each dog year equals 4 human years.  
*Expected Output:*

Input a dog's age in human years: 15

The dog's age in dog's years is 73

**32.**Write a Python program to check whether an alphabet is a vowel or consonant.   
*Expected Output:*

Input a letter of the alphabet: k

k is a consonant.

**33.**Write a Python program to convert month name to a number of days.   
*Expected Output:*

List of months: January, February, March, April, May, June, July, August

, September, October, November, December

Input the name of Month: February

No. of days: 28/29 days

**34.**Write a Python program to sum of two given integers. However, if the sum is between 15 to 20 it will return 20.

**35.**Write a Python program to check a string represent an integer or not.   
*Expected Output:*

Input a string: Python

The string is not an integer.

**36.**Write a Python program to check a triangle is equilateral, isosceles or scalene.   
Note :  
An equilateral triangle is a triangle in which all three sides are equal.  
A scalene triangle is a triangle that has three unequal sides.  
An isosceles triangle is a triangle with (at least) two equal sides.  
*Expected Output:*

Input lengths of the triangle sides:

x: 6

y: 8

z: 12

Scalene triangle

**37.**Write a Python program that reads two integers representing a month and day and prints the season for that month and day.   
*Expected Output:*

Input the month (e.g. January, February etc.): july

Input the day: 31

Season is autumn

**38.**Write a Python program to display astrological sign for given date of birth.   
*Expected Output:*

Input birthday: 15

Input month of birth (e.g. march, july etc): may

Your Astrological sign is : Taurus

**39.**Write a Python program to display the sign of the Chinese Zodiac for given year in which you were born.   
*Expected Output:*

Input your birth year: 1973

Your Zodiac sign : Ox

**40.**Write a Python program to find the median of three values.   
*Expected Output:*

Input first number: 15

Input second number: 26

Input third number: 29

The median is 26.0

**41.**Write a Python program to get next day of a given date.   
*Expected Output:*

Input a year: 2016

Input a month [1-12]: 08

Input a day [1-31]: 23

The next date is [yyyy-mm-dd] 2016-8-24

**42.**Write a Python program to calculate the sum and average of n integer numbers (input from the user). Input 0 to finish.

**43.**Write a Python program to create the multiplication table (from 1 to 10) of a number.   
*Expected Output:*

Input a number: 6

6 x 1 = 6

6 x 2 = 12

6 x 3 = 18

6 x 4 = 24

6 x 5 = 30

6 x 6 = 36

6 x 7 = 42

6 x 8 = 48

6 x 9 = 54

6 x 10 = 60

**44.**Write a Python program to construct the following pattern, using a nested loop number.   
*Expected Output:*

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22

333

4444

55555

666666

7777777

88888888

999999999