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**Batch- C11**

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**Aim:** To study Data types, Input Output, Control Structures in Python

**Program 1**

Write a Python program to print the following string in a specific format Twinkle, twinkle, little star,"How I wonder what you are! "Up above the world so high, Like a diamond in the sky. Twinkle, ' twinkle ', little star, How I wonder what you are Using only one print() function.

**Theory:**

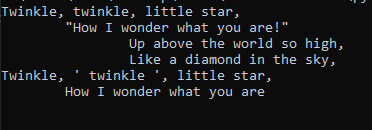
**Python print() function**prints the message to the screen or any other standard output device.

* **\n :** This string literal is used to add a new blank line while printing a statement.
* **\t :** This string literal is used to add a new blank spaces while printing a statement.

**Program:**

print("Twinkle, twinkle, little star,\n\t\"How I wonder what you are!\"\n\t\tUp above the world so high, \n\t\tLike a diamond in the sky, \nTwinkle, ' twinkle ', little star, \n\tHow I wonder what you are");

**Output:**



**Program 1**

Program to show output formatting take two values and display them using single print function using •str.format() •% operator

**Theory**

The format() method formats the specified value(s) and insert them inside the string's placeholder.

The placeholder is defined using curly brackets: {}. Read more about the placeholders in the Placeholder section below.

The format() method returns the formatted string.

**Program**

name = "Rashid";

print(f"My name is {name}");

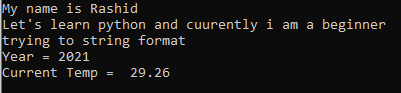
print("Let's learn {} and cuurently i am a {}".format("python","beginner"));

print("trying to {str1} {str2}".format(str1="string", str2="format"));

print("Year = {0}".format(2021));

print("Current Temp = {0: .2f}".format(29.25678));

**Output:**



**Program 3:**

Program to find leap year using nested if

**Theory:**

Python Conditions and If statements

Python supports the usual logical conditions from mathematics:

* Equals: a == b
* Not Equals: a != b
* Less than: a < b
* Less than or equal to: a <= b
* Greater than: a > b
* Greater than or equal to: a >= b

These conditions can be used in several ways, most commonly in "if statements" and loops.

An "if statement" is written by using the if keyword.

**Program**

print("Enter the year: ")

year = int(input());

if year % 4 == 0:

    print("It's a leap year");

else:

    print("It's not a leap year");

print("\n");

**Output:**



**Program 4:**

Program to print all armstrong number in range 100 to 999.

**Theory:**

## Python For Loops

A for loop is used for iterating over a sequence (that is either a list, a tuple, a dictionary, a set, or a string).

This is less like the for keyword in other programming languages, and works more like an iterator method as found in other object-orientated programming languages.

With the for loop we can execute a set of statements, once for each item in a list, tuple, set etc.

**Program**

for i in range(0, 9):

    for j in range(0, 9):

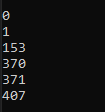
        for k in range(0, 9):

            temp = pow(i, 3) + pow(j, 3) + pow(k, 3);

            if temp == (i\*100 + j\*10 + k) :

                print(temp);

**Output**



**Program 5:**

Program to find fibonacci series of n terms

**Theory**

In mathematics, the Fibonacci numbers, commonly denoted Fₙ, form a sequence, the Fibonacci sequence, in which each number is the sum of the two preceding ones. The sequence commonly starts from 0 and 1,

**Program**

print("\nEnter n");

n = int(input());

prev2 = 0;

prev1 = 1;

print(prev2);

print(prev1);

for i in range(0, n+1):

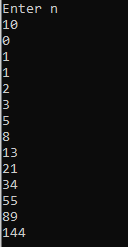
    print(prev1+prev2);

    temp = prev1;

    prev1 = prev1 + prev2;

    prev2 = temp;

**Output**



**Program 6:**

Program on pattern

**Theory**

**Program**

count = 0

for i in 'ABCDEF':

    for j in range(0, count+1):

        print (i, end='');

    print ("\n");

    count = count + 1;

print("\nEnter n");

n = int(input());

for i in range(0,n):

    for j in range(0,i):

        print(" ",end='');

    for j in range(i, n):

        print("\*", end='');

    print("\n");

print("\nEnter n");

n = int(input());

for i in range(0,n):

    for j in range(0,n-i-1):

        print(" ",end='');

    temp = 1;

    for j in range(0, i+1):

        print(temp, end='');

        temp = temp + 1;

    temp = temp - 1;

    for j in range(0, i):

        temp = temp - 1;

        print(temp, end='');

    print("\n");

print("\nEnter n");

n = int(input());

for i in range(0, n):

    for j in range(0,n-i):

        print(" ",end='');

    for j in range(0, i+1):

        print("\* ",end='');

    print("\n");

Output:

