1. Print the first 10 natural numbers using for loop.

for i in range(1,11): #using for loop to print 10 natural numbers

print(i) #print the result

output:

1

2

3

4

5

6

7

8

9

10

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2. Python program to check if the given string is a palindrome

def is\_palindrome(s):

s = s.lower() # Convert the string to lowercase to

handle case sensitivity

reversed\_s = s[::-1] # Reverse the string

return s == reversed\_s # Check if the original string is equal

to its reverse

string = input("Enter a string: ")

if is\_palindrome(string):

print("The string is a palindrome.")

else:

print("The string is not a palindrome.")

output: Enter a string: mam

The string is a palindrome.

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3. Python program to check if a given number is an Armstrong number

def is\_armstrong\_number(num):

num\_str = str(num) # Convert the number to a string to

calculate the number of digits

num\_digits = len(num\_str)

sum = 0

for digit in num\_str: # Iterate through each digit in the

number

sum += int(digit) \*\* num\_digits # Add the nth power of the digit

to the sum

return sum == num # Check if the sum is equal to the

original number

number = int(input("Enter a number: "))

if is\_armstrong\_number(number):

print(number, "is an Armstrong number.")

else:

print(number, "is not an Armstrong number.")

output: Enter a number: 5

5 is an Armstrong number.

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4. Python program to get the Fibonacci series between 0 to 50

def fibonacci\_series(n):

a, b = 0, 1 # Initialize variables for the first two Fibonacci

number

fibonacci\_series = [] # Initialize an empty list to store the Fibonacci

series

while a <= n: # Generate Fibonacci numbers until the nth

number is less than or equal to 50

fibonacci\_series.append(a)

a, b = b, a + b # Calculate the next Fibonacci number

return fibonacci\_series

# Call the function to get the Fibonacci series between 0 to 50

fibonacci\_series\_50 = fibonacci\_series(50)

print("Fibonacci series between 0 to 50:")

print(fibonacci\_series\_50)

output: Fibonacci series between 0 to 50:

[0, 1, 1, 2, 3, 5, 8, 13, 21, 34]

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