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Subject - AI ML Assignment 1.10

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

original\_num = num

reverse\_num = 0

while num > 0:

digit = num % 10

reverse\_num = (reverse\_num \* 10) + digit

num = num // 10

if original\_num == reverse\_num:

print("The number is a palindrome.")

else:

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

2)start = int(input("Enter the starting number of the interval: "))

end = int(input("Enter the ending number of the interval: "))

print("Multiples of 3 and 5 in the interval [{}, {}]: ".format(start, end))

for num in range(start, end + 1):

if num % 3 == 0 or num % 5 == 0:

print(num)

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

factorial = 1

if num < 0:

print("Factorial is not defined for negative numbers.")

elif num == 0:

print("The factorial of 0 is 1.")

else:

for i in range(1, num + 1):

factorial \*= i

print("The factorial of {} is {}.".format(num, factorial))

4)num\_terms = int(input("Enter the number of terms: "))

# First two terms of the sequence

first\_term = 0

second\_term = 1

# Check if the number of terms is valid

if num\_terms <= 0:

print("Number of terms should be a positive integer.")

elif num\_terms == 1:

print("Fibonacci sequence up to", num\_terms, "term:")

print(first\_term)

else:

print("Fibonacci sequence up to", num\_terms, "terms:")

print(first\_term)

print(second\_term)

for i in range(2, num\_terms):

next\_term = first\_term + second\_term

print(next\_term)

first\_term = second\_term

second\_term = next\_term

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

order = len(str(num))

sum = 0

temp = num

while temp > 0:

digit = temp % 10

sum += digit \*\* order

temp //= 10

if num == sum:

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

else:

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