1. **Develop a python program to read n digit integer number, and separate the integer number and display each digit. [Hint: input:5678 output: 5 6 7 8, use: floor and mod operators)**

# Read an integer from the user

n = int(input("Enter an integer number: "))

# Ensure that the entered number is non-negative

print(f"Digits of the number {n}:")

while n > 0:

digit = n % 10

print(digit)

n = n // 10

1. **Develop a python program to accept 4 numbers and display them in sorted order using a minimum number of if else statements.**

#Get user input

first = int(input("Enter the first number: "))

second = int(input("Enter the second number: "))

third = int(input("Enter the third number: "))

fourth=int(input("Enter the fourth number"))

if (first > second):

temp=first

first=second

second=temp

if (third > fourth):

temp=third

third=fourth

fourth=temp

if (first > third):

temp=first

first=third

third=temp

if (second > fourth):

temp=second

second=fourth

fourth=temp

if (second > third):

temp=second

second=third

third=temp

print(f"Sorted values: {first}, {second}, {third}, {fourth}")

1. **Develop python scripts to Calculate the mean, median, mode, variance and standard deviation of n integer numbers.**

import math

from collections import Counter

# Input the number of elements (N)

N = int(input("Enter the number of elements: "))

# Input N numbers and create a list

numbers = []

for i in range(N):

num = float(input(f"Enter number {i + 1}: "))

numbers.append(num)

# Calculate the mean

mean = sum(numbers) / N

# Calculate the variance

variance=0

for x in numbers:

n1 = (x - mean) \*\* 2

variance=variance+n1

variance=variance/N

# Calculate the standard deviation

std\_deviation = math.sqrt(variance)

#Calculate mode

counter = Counter(numbers)

max\_freq = max(counter.values())

# Find all values with the maximum frequency

mode\_values = [key for key, value in counter.items() if value == max\_freq]

# Display the results with suitable messages

print("\nStatistics:")

print("Mean:", mean)

print("Variance:", variance)

print("Standard Deviation:", std\_deviation)

print("Mode:",mode\_values[0])

1. **Develop a program for checking if a given n digit number is palindrome or not. [hint: input 1221 output: palindrome, use //and % operator with loop statement]**

n=int(input("enter the number"))

i=0

rev=0

org=n

while n!=0:

rem=n%10

rev=(rev\*10)+rem

n=n//10

print(rev)

if rev==org:

print("number is palindrome")

else:

print("number is not palindrome")

1. **Develop a python script to display a multiplication table for given integer n**

n=int(input("Enter the number to be multiplied"))

for i in range(1,11):

mul=i\*n

print("%d\*%d=%d\n"%(i,n,mul))

1. **Develop a python script to rotate right about a given position in that list and display them. [hint: input [1,4,5,-10] position: 2, output: [-10,5,4,1]]**

def rotate\_right\_at\_position(lst, position):

if 0 <= position < len(lst):

# Split the list at the specified position and rotate each part

n1=lst[position:]

print(type(n1))

n1.reverse()

n2=lst[:position]

n2.reverse()

rotated\_list = n1 + n2

return rotated\_list

else:

print("Invalid position.")

return lst

# Example usage:

original\_list = [1, 4, 5, -10]

rotation\_position = 2

result = rotate\_right\_at\_position(original\_list, rotation\_position)

print("Original List:", original\_list)

print(f"Rotated List (right about position {rotation\_position}):", result)

1. **Write a python script to interchange the digits of a given integer number. [hint: input: 23456, interchange: 3 and 5 output: 25436]**

def interchange\_digits(number):

# Convert the number to a list of digits

digits = [int(digit) for digit in str(number)]

# Interchange the digits except the first, last, and middle

length = len(digits)

if length >= 3:

for i in range(1, length // 2):

digits[i], digits[length - 1 - i] = digits[length - 1 - i], digits[i]

elif length<=2:

digits[1], digits[-2] = digits[-2], digits[1]

# Construct the result without using int()

result = 0

place\_value = 1

for digit in reversed(digits):

result += digit \* place\_value

place\_value \*= 10

return result

# Get user input

input\_number = int(input("Enter an integer number: "))

# Interchange the digits and print the result

interchanged\_number = interchange\_digits(input\_number)

print("Interchanged number:", interchanged\_number)

1. **Develop a python program to capitalize a given list of strings. [hint: [hello, good, how, simple] output: [Hello, Good, How, Simple]**

input\_list = ['hello', 'good', 'how', 'simple']

# Capitalize each string using a list comprehension

capitalized\_list = [word.capitalize() for word in input\_list]

# Print the result

print(capitalized\_list)