**Python Tasks – Day14**

1. **Program to find the sum of digits of a number until the sum is reduced to 1 digit**

**Ans:**

num = input("Enter a number: ")

sum = 0

while len(num) > 1:

for digit in num:

sum += int(digit)

num = str(sum)

sum = 0

print("The sum of digits of the number until it is reduced to 1 digit is:", num)

1. **Program to find LCM and HCF of two numbers**

**Ans:**

def gcd(a,b):

if(b==0):

return a

else:

return gcd(b,a%b)

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

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

gcd = gcd(a,b)

lcm = (a\*b)//gcd

print("The HCF of",a,"and",b,"is",gcd)

print("The LCM of",a,"and",b,"is",lcm)

1. **Write a program to accept any number n and print the cube of all numbers from 1 to n which are divisible by 3. Rewrite the program using a continue statement.**

**Ans:**

n = int(input("Enter any number: "))

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

if i % 3 == 0:

print(i\*\*3)

print("\nRewritten using continue statement:")

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

if i % 3 != 0:

continue

print(i\*\*3)

1. **Write a program to read roll number and marks of 10 students in 3 subjects. The valid range for roll number is 1000-9999, if the roll number entered is not in this range, the user should be asked to enter again. Calculate total marks of only those students who get more than or equal to 40 marks in each subject. Count the number of students whose total is more than 200. Print the roll number of the students who gets the highest total.**

**Ans:**

def main():

students = {}

for i in range(10):

while True:

roll = int(input(f"Enter roll number for student {i+1}: "))

if roll < 1000 or roll > 9999:

print("Invalid roll number. Try again.")

else:

break

marks = []

for j in range(3):

while True:

mark = int(input(f"Enter marks for subject {j+1} of student {i+1}: "))

if mark < 0 or mark > 100:

print("Invalid mark. Try again.")

else:

break

marks.append(mark)

students[roll] = marks

count = 0

highest\_total = -1

highest\_roll = -1

for roll, marks in students.items():

if all(mark >= 40 for mark in marks):

total = sum(marks)

if total > highest\_total:

highest\_total = total

highest\_roll = roll

if total >= 200:

count += 1

print(f"Number of students with total marks greater than or equal to 200: {count}")

print(f"Roll number of student with highest total marks: {highest\_roll}")

if \_\_name\_\_ == '\_\_main\_\_':

main()

1. **Write a program to input a number and count the digits in it. Use while loop and the program should work correctly for 0 also**

**Ans:**

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

count = 0

if num == 0:

count = 1

while num != 0:

count += 1

num //= 10

print("The number of digits in the number are:", count)

1. **Write a program to enter a number and find the reverse of that number. Also display the double of the reverse number. (don’t use string magic)**

**Ans:**

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

reverse\_num = 0

while(num > 0):

remainder = num % 10

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

num = num//10

print("Reverse of the number:", reverse\_num)

print("Double of the reverse number:", reverse\_num \* 2)