Labsheet-2

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# Q1
'''def withdraw(init_amount,withdraw_amount):
   Total_amount=withdraw_amount
   return Total_amount
init_amount=int(input("Enter the balance: "))
balance=int(input("Enter the balance: "))
while True:
   withdraw_amount=int(input("Enter the withdrawl balance:"))
   if(withdraw_amount<=0):
      break
      print("Transaction Completed")
   else:
      balance=withdraw(balance,withdraw_amount)
      print("Remaining Balance:",balance)
   if(balance==0):
      print("Transaction Completed")
      break'''


# Q2
"""def average(Total_marks,no_students):
   print("Average marks:",Total_marks/no_students)
Total_marks=0
n=0
while True:
   marks=int(input("Enter the marks:"))
   if marks<0 and marks>100:
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        continue
    elif marks==0:
        average(Total_marks,n)
        break
    else:
        Total_marks+=marks
        n+=1"""

# Q3
"""def factorial(n):
    if n==0:
        return 1
    return n*factorial(n-1)
while True:
    n=int(input("enter the number:"))
    if n==1:
        break
    else:
        fact=factorial(n)
        print("Factorial of ",n,"is",fact)"""

# Q4
"""def add(a,b):
    return a+b
def subs(a,b):
    return a-b
def multiply(a,b):
    return a*b
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def division(a,b):
    pass
while True:
    choice=int(input("Enter Choice:"))
    n1=int(input("Enter a number:"))
    n2=int(input("Enter a number:"))
    if choice==1:
        n1=int(input("Enter a number:"))
        n2=int(input("Enter a number:"))
        result=subs(n1,n2)
        print("Result=",result)
    elif choice==2:
        n1=int(input("Enter a number:"))
        n2=int(input("Enter a number:"))
        result=add(n1,n2)
        print("Result=",result)
    elif choice==3:
        n1=int(input("Enter a number:"))
        n2=int(input("Enter a number:"))
        result=multiply(n1,n2)
        print("Result=",result)
    elif choice==4:
        n1=int(input("Enter a number:"))
        n2=int(input("Enter a number:"))
        print("Calculator Exited")
        break
    else:
        print("Invalid Choice")"""
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# Q5
"""def calculate_bill(units):
    bill = 0
    if units <= 50:
        bill = units * 4
    elif units <= 100:
        bill = 50 * 4 + (units - 50) * 6
    else:
        bill = 50 * 4 + 50 * 6 + (units - 100) * 5
    return bill
while True:
    units = int(input("Enter units: "))
    if units == 0:
        break
    amount = calculate_bill(units)
    print("Bill amount:", amount)"""

# Q6
"""def nature(n):
    if n%2==0:
        return "Even"
    else:
        return "Odd"
while True:
    n=int(input("Enter a number:"))
    if n<-1:
        continue
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    elif n==0:
        break
    else:
        result=nature(n)
        print(n,"is",result)"""

# Q7
"""def sum_of_digits(n):
    if n==0:
        return 0
    return n%10+sum_of_digits(n//10)
while True:
    n=int(input("Enter a number:"))
    if n==0:
        break
    else:
        result=sum_of_digits(n)
        print("Sum of digits:",result)"""

# Q8
"""def depoist(balance,depoist_amount):
    balance+=depoist_amount
    return balance
balance=0
while True:
    depoist_amount=int(input("Enter the amount:"))
    if depoist_amount==0:
        print("Total_balance:",balance)
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      break
   balance=depoist(balance,depoist_amount)"""


# Q9
"""def Prime_Number_Checker(n):
   for i in range(2,(n//2)):
      if n%i==0:
         return "Not a Prime"
   return "Prime"
while True:
   n=int(input("Enter a number:"))
   if n==0:
      break
   elif n<0:
      continue
   else:
      print(n,"is",Prime_Number_Checker(n))
      """
# Q10
"""def calculate_percentage(present,total):
   if total==0:
      return 0
   return(present/total)*100
total_class=0
present_count=0
while True:
   attendance=int(input("Enter attendance (1=Present, 0=Absent, -1=Stop, 2=Reserved):
"))
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    if attendance==-1:
        break
    if attendance==2:
        pass
    elif attendance==1:
        present_count+=1
        total_class+=1
    elif attendance==0:
        total_class+=1
    else:
        print("Invalid input")
percentage = calculate_percentage(present_count, total_class)
print(f"Attendance percentage: {percentage:.2f}%")"""

# Q11
"""def fibonacci(n):
    if n<=1:
        return n
    return n*fibonacci(n-1)+fibonacci(n-2)
a=int(input("Enter the number:"))
for i in range(a):
    print(fibonacci(i),end=" ")"""

# Q12
"""def calculate_total():
    total=0
    while True:
        price=float(input("Enter the price:"))
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        if price==0:
            break
        total=price
        return total
bill=calculate_total()
print("Total bill:",int(bill))"""

# Q13
"""secret_number=7
while True:
    guess=int(input("Enter the guess:"))
    if guess==secret_number:
        print("Correct Guess")
        break
    else:
        print("Wrong guess")"""

# Q14
"""def check_eligiblity(age):
    if age==18:
        print("Eligible to vote")
    else:
        print("Not eligible to vote")
while True:
    age=int(input("Enter age:"))
    if age==0:
        break
    if age<0:
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        continue
    check_eligiblity(age)"""

# Q15
"""def power(base,exp):
    if exp==0:
        return 1
    return base*power(base,exp-1)
while True:
    base=int(input("Enter base:"))
    exp=int(input("Enter Exponent:"))
    if base==0 and exp==0:
        break
    print("Result=",power(base,exp))"""

# Q16
"""def table(num):
    for i in range(1,11):
        if i%5==0:
            continue
        print(f"{num}X{i}={num*i}")
n=int(input("Enter number:"))
table(n)"""

# Q17
"""def calculate_score():
    total=0
    while True:
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    marks=int(input("Enter marks:"))
    if marks==0:
      break
    if marks==-1:
      pass
    else:
      total+=marks
    return total
print("Total score:",calculate_score())"""

# Q18
"""def simple_interest(p,r,t):
  return(p*r*t)//100
while True:
  p=int(input("Enter Principal:"))
  r=int(input("Enter rate:"))
  t=int(input("Enter time:"))
  if p==0 and r==0 and t==0:
    break
  print("Interest:",simple_interest(p,r,t))"""

# Q19
"""def reverse_num(n,rev=0):
  if n==0:
    return rev
  return(n//10,rev*10,n%10)
while True:
  num=int(input("Enter number:"))
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    if num==0:
        break
        print("Reversed",reverse_num(num))"""

# Q20
"""def total_salary(basic,bonus):
    return basic+bonus
while True:
    basic=int(input("Enter the basic:"))
    bonus=int(input("Enter the bonus:"))
    if basic==0 and bonus==0:
        break
    print("Total Salary:" Total_salary(basic,bonus))"""

# Q21
"""def count_frequency(numbers,target):
    count=0
    for num in numbers:
        if num == target:
            count+=1
    return count
numbers = list(map(int, input("Enter numbers: ").split()))
target = int(input("Enter number to search: "))
result = count_frequency(numbers, target)
print(f"Frequency of {target} is {result}")"""

# Q22
"""def add(a,b):
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    return a+b
def subs(a,b):
    return a-b
def multiply(a,b):
    return a*b
def division(a,b):
    pass
while True:
    choice=int(input("Enter Choice:"))
    n1=int(input("Enter a number:"))
    n2=int(input("Enter a number:"))
    if choice==1:
        n1=int(input("Enter a number:"))
        n2=int(input("Enter a number:"))
        result=subs(n1,n2)
        print("Result=",result)
    elif choice==2:
        n1=int(input("Enter a number:"))
        n2=int(input("Enter a number:"))
        result=add(n1,n2)
        print("Result=",result)
    elif choice==3:
        n1=int(input("Enter a number:"))
        n2=int(input("Enter a number:"))
        result=multiply(n1,n2)
        print("Result=",result)
    elif choice==4:
        n1=int(input("Enter a number:"))
```

```
        n2=int(input("Enter a number:"))
        print("Calculator Exited")
        break
    else:
        print("Invalid Choice")"""

# Q23
"""def gcd(a,b):
    if b==0:
        return a
    return gcd(b,a%b)
while True:
    a=int(input("Enter the number:"))
    b=int(input("Enter the number:"))
    if a==0 and b==0:
        break
    result=gcd(a,b)
    print("GCD is:",result)"""

# Q24

"""def book_seat(available_seats, seats_to_book):
    if seats_to_book <= available_seats:
        available_seats -= seats_to_book
        print(f"{seats_to_book} seat(s) booked successfully!")
    else:
        print("Not enough seats available!")
    return available_seats
```

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total_seats = 10
while True:
    if total_seats == 0:
        print("All seats are booked. No more bookings allowed.")
        break
    print("\nAvailable Seats:", total_seats)
    seats_to_book = int(input("Enter number of seats to book: "))
    total_seats = book_seat(total_seats, seats_to_book)
    choice = input("Do you want to continue booking? (yes/no): ").lower()
    if choice == "no":
        break
print("Thank you for using Bus Ticket Booking System!")
"""

# Q25
"""def find_max_min(temp_list):
    maximum=max(temp_list)
    minimum=min(temp_list)
    return maximum,minimum
temperature=[]
for i in range(4):
    temp=int(input("Enter the temperature:"))
    if temp<0:
        continue
    temperature.append(temp)
if len(temperature)>0:
    max_temp,min_temp=find_max_min(temperature)
    print("Maximum temperature:", max_temp)
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    print("Minimum temperature:", min_temp)
else:
    print("No valid temperatures entered.")"""

# Q26
"""def assign_grade(marks):
    if marks >= 90:
        return "A+"
    elif marks >= 75:
        return "A"
    elif marks >= 60:
        return "B"
    elif marks >= 50:
        return "C"
    elif marks >= 35:
        return "D"
    else:
        return "Fail"
n = int(input("Enter number of students: "))
for i in range(1, n + 1):
    print(f"\nStudent {i}")
    entry = input("Enter marks (or type 'A' if absent): ")
    if entry.upper() == 'A':
        pass
    else:
        marks = int(entry)
        grade = assign_grade(marks)
        print("Grade:", grade)
```

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print("\nResult processing completed.")
"""


# Q27
def count_digits(n):
    if n == 0:
        return 0
    else:
        return 1 + count_digits(n // 10)
while True:
    num = int(input("Enter number: "))
    if num == 0:
        break
    num = abs(num)
    digits = count_digits(num)
    print("Number of digits:", digits)
```