1. **Scenario:** You are developing a banking application that categorizes transactions based on the amount entered.  
    Write logic to determine whether the amount is positive, negative, or zero.

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ANS:

**1. Input the amount in Rs.**

**2.Check for Minimum balance.**

**3. If Minimum balance < Existing Balance amount - Requested amount; Print (transaction done)**

**4. If Minimum balance = Existing Balance amount - Requested amount :Print(transaction done)**

**5. If Minimum balance > Existing Balance amount - Requested amount ;Print(transaction not done, Insufficient Balance)**

1. **Scenario:** A digital locker requires users to enter a numerical passcode. As part of a security feature, the system checks the sum of the digits of the passcode.  
    Write logic to compute the sum of the digits of a given number.

ANS:

**1. Input the 6 digit passcode.**

**2. s = 0**

**3. for i in range(1,7):**

**4. s = s+i**

**5. print(“Sum of digits of a given number is:” , s)**

1. **Scenario:** A mobile payment app uses a simple checksum validation where reversing a transaction ID helps detect fraud.  
    Write logic to take a number and return its reverse.

ANS:

**1. Input the 6 digit transaction ID in tid**

**2. Convert the integer to list**

**3. reverse the list and store in the same list**

**4. convert the list back to integer**

1. **Scenario:** In a secure login system, certain features are enabled only for users with prime-numbered user IDs.  
    Write logic to check if a given number is prime.

**Ans:**

**1. Input the user ID**

**2. Check if the number is divisible by and Itself**

**3. If yes : print (“Allowed access)**

**4. else: print (“Access denied”)**

1. **Scenario:** A scientist is working on permutations and needs to calculate the factorial of numbers frequently.  
    Write logic to find the factorial of a given number using recursion.

**Ans:**

**1. Input the number as n**

**2. s = 1**

**3. for i in range(1,n+1)**

**4. s = s \*i**

**5.Print s**

1. **Scenario:** A unique lottery system assigns ticket numbers where only Armstrong numbers win the jackpot.  
    Write logic to check whether a given number is an Armstrong number.

**Ans:**

**1. Input the ticket number as t**

**2. Convert integer to List L**

**3. calculate the length of List(total numbers in the digit) as p**

**4. s=0**

**5. for i in range(1,p+1)**

**6.s = s+L(i)\*\*p**

**7. if s == t print(“Armstrong number”)**

**Else: print (“not an Armstrong number”)**

1. **Scenario:** A password manager needs to strengthen weak passwords by swapping the first and last characters of user-generated passwords.  
    Write logic to perform this operation on a given string.

**ANS: 1. Input the password string**

**2. convert string to list**

**3.swap the first and last elements of list**

**4. Convert list to string**

**4. print the password**

1. **Scenario:** A low-level networking application requires decimal numbers to be converted into binary format before transmission.  
    Write logic to convert a given decimal number into its binary equivalent.

**ANS: 1. Input the decimal number**

**2. If the number > 2 , divide it by 2**

**3.store the remainder**

**4. keep dividing till condition true**

**4. print the remainder**

1. **Scenario:** A text-processing tool helps summarize articles by identifying the most significant words.  
    Write logic to find the longest word in a sentence.

**Ans: 1. Input the sentence**

**2. Extract words from sentence**

**3. calculate length of each word**

**4. display the word with more characters**

1. **Scenario:** A plagiarism detection tool compares words from different documents and checks if they are anagrams (same characters but different order).  
    Write logic to check whether two given strings are anagrams.

**Ans: 1. Input two words to be compared**

**2. sort the characters from both words**

**3. compare both words**

**4. If same print (“Anagrams”)**

**Else : print (“not an Anagram”)**

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