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.

**Ramishahope Artificial Intelligence Pvt Ltd**

**36, Old Anandas, SG Arcade, Marudhamalai Main Road, Vadavalli, Coimbatore -641041.**

**+91 6385383227 |** [**www.hopelearning.net**](http://www.hopelearning.net/) **|** [**mdaravind@hopelearning.net**](mailto:mdaravind@hopelearning.net) **| 33AAMCR3722R1ZU**

**Logic:  
 Get an input from user**

**If amout is greater than zero ,it is postive and Transaction:Deposit**

**Elseif amout is less than zero ,it is negative and Transaction: withdrawal**

**Else amout is zero , it is no transaction.**

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.

**Logic:**

**Get an input from user (Numerical passcode)**

**Separate passcode into single digit using string method**

**Then do sum of the digits for given passcode**

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.

**Logic:**

**Get an input from user (int datatype)**

**Convert int to string**

**Then reverse string value and then again convert into int format.**

**Now we will get reverse value**

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.

**Logic:**

**Ask user to enter user id**

**Check whether id is divisible by itself and 1**

**If its divisible it is prime else not a prime number**

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.

Logic:

Get number value from user.  
if given number more than 1, then multiple that number factorial of (number-1).

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.

Logic:

Get number from user

Count length of digit in given number

then power(\*\*) of each number with length of digit and sum all numbers.

Check total value is equal to given number by user.

If yes , it is armstrong number else not a 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.

**Logic:**

**Get password from user**

**Convert string into list**

**Assign first character to temp variable**

**By calculating length of the string swap first to last character from password**

**Again convert password from list to string**

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.

**Logic:**

**Get a decimal number from user.**

**Add empty string before while loop**

**Using while condition, divide given number by 2, until number less than equal to 1**

**Store all remainder values in string format**

**Combined remainder value in binary format of given number**

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.

**Logic:**

**Get a sentence from user**

**Using split method, split given sentence**

**Using loop function check maximum length of the word from sentence.**

**Then save the longest word from sentence**

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.

**Logic:**

**Enter two strings s1 and s2.  
Using sorted method compare two strings are anagram or not**

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