Python set questions - scenario based -2

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

ANSWER:

1. If amount > 0 , deposite (its positive)

2.If amount < 0 , withdrawal (its negative)

3. if amount is 0 , no transaction

2. **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.

ANSWER:

1. The user enters their passcode (int)

2. Initialize a variable sum to 0.

3. Repeat until the passcode becomes 0.

4. Output the final value of sum.

3. **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.

ANSWER:

1. **The system receives the transaction ID.**

2. **Initialize a variable reverse as 0.**

3. **Repeat until the number becomes 0.**

4. **output the final reversed number.**

4. **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.

ANSWER:

1. The system receives the user ID.
2. if ID > 1, it is prime.
3. If ID < 1 , it is not a prime.
4. Output return prime or not prime.

5. **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.

ANSWER:

1. If n==0 or n==1 , return 1
2. In recursive case return n* factorial (n-1)
3. Print (factorial of{number} is{ result}

6. **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

ANSWER:

1. convert number to string to easily count digits.
2. calculate the sum of each digit raised to the power of num_digit.
3. check if the calculated sum equals the original number.
4. return total == number.

7. **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.

ANSWER: 1. Enter the password as int.

2.swap the first and last characters.

3. that is new_password = strengthen _password

4. print (new password)

8. **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.

ANSWER:

1. The code handles 0 as a special case.

2. It repeatedly divides the number by 2, keeping track of the remainder.

3. The remainder collected in reverse form give the binary representation.

4. Finally , the code builds the binary string from the last remainder to the first.

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

ANSWER: 1. split the sentence into words.

2. Initialize to keep track of the longest word.

3. Remove punctuation from the word for accurate

comparison.

4. Print (the longest word)

10.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.

ANSWER: 1. Remove spaces and convert to lowercase for uniform comparison.

2. sort the characters and compare.

3.if the sorted characters match , the strings are anagrams.