## Question 2 :Borrow Number

**Problem Statement :**

You have two numbers number1 and number2, your job is to check the number of borrow operations needed for subtraction of number1 from number2. If the subtraction is not possible then return the string not possible.

**Example :**

754
658

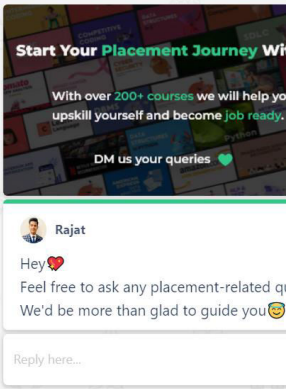
**Answer :**

2

654
666

**Answer :**

Not possible




```python
number1 = int(input())
number2 = int(input())
count = 0
if number1 < number2:
    print("Not possible")
else:
    flag = 0
    while number1 != 0 and number2 != 0:
        temp1 = 0
        temp2 = number2 % 10
        if flag:
            temp1 = number1 % 10 - 1
        else:
            temp1 = number1 % 10
        if temp1 < temp2:
            count += 1
            flag = 1
        else:
            flag = 0
        number1 = number1 // 10
        number2 = number2 // 10
    print(count)
```

https://prepinsta.com/tata-elxsi-coding-questions/

## Question 3 : Capitalize/Decapitalize

**Problem Statement :**

You're given a function that accepts the following, a string1, its length and a character c. Your job is to replace all the occurrences of character c in string1 and capitalize it or decapitalize it based on the character c.

**Input :**
hello world
l
**Output :**
heLLo worLd

**Input :**
prepinsta
p
**Output :**
PrePinsta

```
ss = input()
k = input()
if k.isupper():
    s = s.replace(k, chr(ord(k) + 32))
else:
    s = s.replace(k, chr(ord(k) - 32))
print(s)
```

## Question 4 : Individual Character Count

**Problem Statement :**

You're given a string where multiple characters are repeated consecutively. You're supposed to reduce the size of this string using mathematical logic given as in the example below :

**Input :**
aabbbbeeeeffggg
**Output:**
a2b4e4f2g3

**Input :**
abbccccc
**Output:**
ab2c5

```
s = input()
i = 1
c = 1
while i < len(s):
    if s[i] == s[i - 1]:
        c += 1
    else:
        print(s[i - 1], end="")
        print(c, end="")
        c = 1
    i += 1
print(s[i - 1], end="")
print(c)
```

## Question 5 :Make It Palindrome

**Problem Statement :**

You're given a string, you've to print additional characters needed to make that string a palindrome.

A Palindrome is a sequence of characters that has the property of reading the same in either direction.

**Input :**

abede

**Output :**

ba

**Sample Input :**

abcfe

**Sample output :**

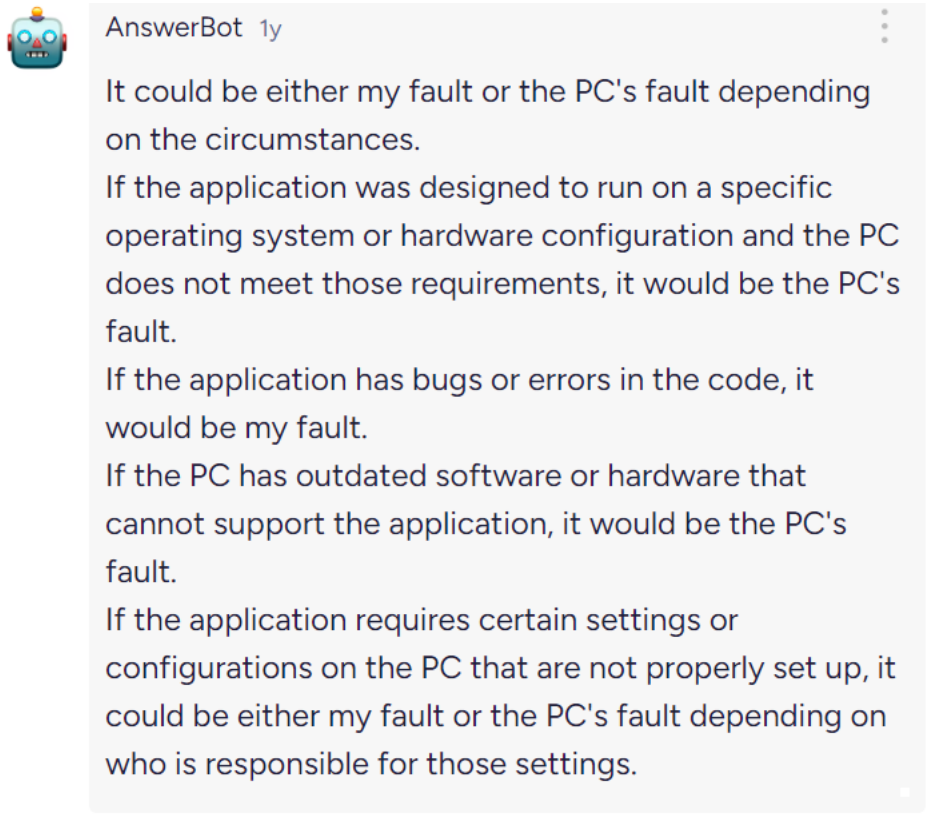
fcba

```python
def ispalindrome(s):
    return s == s[::-1]

def solve(s):
    if ispalindrome(s):
        return None
    for i in range(len(s)):
        x = s[:i][::-1]
        if ispalindrome(s + x):
            return x

s = input()
print(solve(s))
```

## TCS Questions (AmbitionBox)

**NINJA(FRESHER)**

If an application designed by you does not runs on PC, is it your fault or PCs fault?




How to print “hello world” 1000 times without loop?

Ans: recursion function

In the given series: 0,0,2,1,4,2,6,3,8,4,10,5,12,6,14,7,16,8 Write a program to find the nth term in this series.

**Formulating the General Term:**

For the $i$-th term of the series $S[i]$:

$$S[i] = \begin{cases} 2 \times \left(\frac{i}{2}\right) = i & \text{if } i \text{ is even} \\ \left(\frac{i-1}{2}\right) & \text{if } i \text{ is odd} \end{cases}$$

This pattern matches the given series:

$0, 0, 2, 1, 4, 2, 6, 3, 8, 4, 10, 5, 12, 6, 14, 7, 16, 8$

Thus, the series interleaves two simpler arithmetic sequences: one with even numbers starting from 0 and increasing by 2, and the other with non-negative integers starting from 0 and increasing by 1.

## What is Abstraction ? Explain with example

AnswerBot 1y

Abstraction is the process of hiding complex details and showing only essential features.
Abstraction helps in reducing complexity and increasing efficiency.
It allows us to focus on the important aspects of an object or system.
For example, a car can be abstracted as a mode of transportation with certain features like speed, fuel efficiency, and safety.
Abstraction can be achieved through encapsulation and inheritance in object-oriented programming.

## Describe cloud computing in detail and what are its models?

Cloud computing is the delivery of computing services over the internet.

- Cloud computing allows users to access data and applications from anywhere with an internet connection.
- There are three main models of cloud computing: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS).

- IaaS provides virtualized computing resources, such as servers and storage, over the internet.
- PaaS provides a platform for developers to build and deploy applications without having to manage the underlying infrastructure.
- SaaS provides access to software applications over the internet, eliminating the need for users to install and maintain software on their own devices.
- Examples of cloud computing services include Amazon Web Services, Microsoft Azure, and Google Cloud Platform.

In a string given reduce the size of the string using mathematical logic.

Consider using compression algorithms like Huffman coding or Lempel-Ziv-Welch.
Look for patterns or repetitions in the string that can be represented more efficiently.
Consider using mathematical formulas or equations to represent the string.

## What is Sdlc? And difference between waterfall and agile

SDLC stands for Software Development Life Cycle. Waterfall and Agile are two different approaches to SDLC.

- SDLC is a process followed by software development teams to design, develop, and test high-quality software.
- Waterfall is a linear approach where each phase of the SDLC must be completed before moving on to the next phase.
- Agile is an iterative approach where the development team works in short sprints to deliver working software quickly and continuously improve it.
- Waterfall is best suited for projects with well-defined requirements, while Agile is better for projects with changing requirements or where the end goal is not clear.
- Both approaches have their advantages and disadvantages, and the choice of approach depends on the project requirements and team's capabilities.

Another question-

- Open loop system is a system where the output is not controlled by the input, while closed loop system is a system where the output is controlled by the input.
- Air conditioning system is a closed loop system as it maintains a constant temperature by adjusting the input based on the output.
- An object is an instance of a class that has its own set of properties and methods.
- If a data member is protected in a class, it can be accessed by the derived class.

## What is polymorphism?

Polymorphism is the ability of an object to take on many forms.

- It allows objects of different classes to be treated as if they were objects of the same class.
- It is achieved through method overriding and method overloading.
- Example: A shape class can have different subclasses like circle, square, and triangle, each with their own implementation of the draw method.
- Example: A method can take in different types of objects as parameters, as long as they share a common interface or superclass.

## What is Encapsulation?

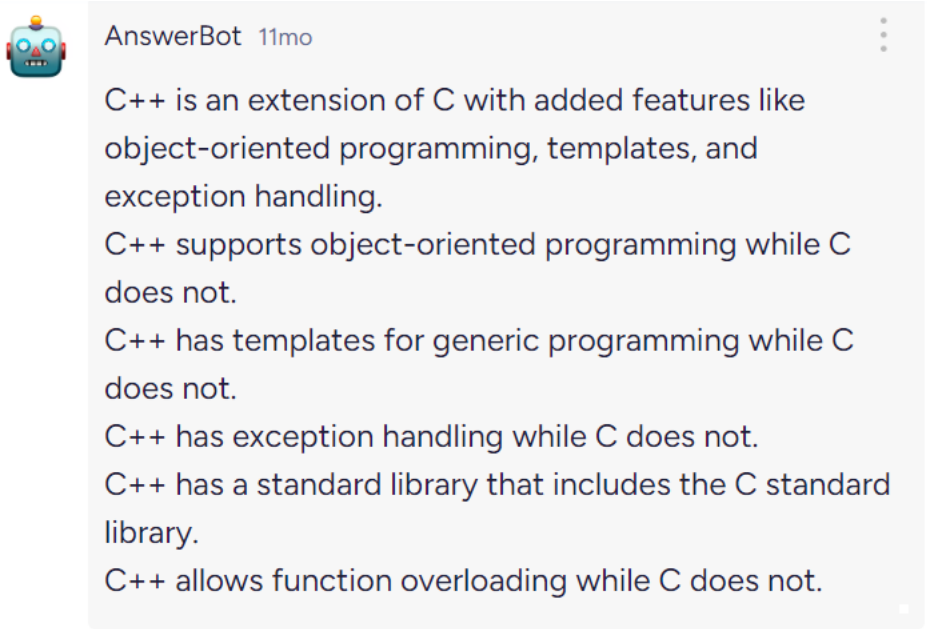
Encapsulation in Java is a mechanism of wrapping the data (variables) and code acting on the data (methods) together as a single unit. In encapsulation, the variables of a class will be hidden from other classes, and can be accessed only through the methods of their current class.

## Can foreign keys store null values?

Yes, foreign keys can store null values.

- A foreign key can be set to NULL if the corresponding record in the parent table is deleted or updated.
- This can be useful in cases where the relationship between the tables is optional.
- However, it is important to ensure that the foreign key constraint is properly defined to avoid data inconsistencies.

## what is difference between c and c++



What is big data?

AnswerBot 1y

Big data refers to large and complex data sets that cannot be processed using traditional data processing methods.
Big data involves the collection, storage, and analysis of massive amounts of data
It requires advanced technologies and tools to process and make sense of the data
Examples of big data include social media data, sensor data, and financial transaction data

what is the computer networking

AnswerBot 1y

Computer networking is the practice of connecting devices together to share resources and communicate with each other.
Computer networking involves the use of hardware and software to connect devices together, such as computers, printers, and servers.
Networking protocols, such as TCP/IP, are used to facilitate communication between devices.
Examples of computer networking include local area networks (LANs), wide area networks (WANs), and the internet.
Networking can also involve security measures, such as firewalls and encryption, to protect data and prevent unauthorized access.

## Why TCS?

AnswerBot 11mo

TCS is a global IT services company with a strong reputation for innovation and customer satisfaction.
TCS has a proven track record of delivering high-quality IT services to clients around the world.
TCS is known for its innovative approach to technology and its ability to stay ahead of the curve.
TCS has a strong focus on customer satisfaction and works closely with clients to understand their needs and deliver customized solutions.
TCS offers a wide range of services, including consulting, application development, and infrastructure management.
TCS has a global presence with offices in over 46 countries and a diverse workforce of over 400,000 employees.

## What is inheritance? Explain

Inheritance is a concept in object-oriented programming where a class inherits properties and behaviors from another class.
Inheritance allows for code reuse and promotes modularity.
The class that is being inherited from is called the superclass or base class.
The class that inherits from the superclass is called the subclass or derived class.
The subclass inherits all the public and protected members of the superclass.
Inheritance can be single, where a subclass inherits from only one superclass, or multiple, where a subclass inherits from multiple superclasses.
Example: A class Animal can be a superclass, and classes like Dog and Cat can be subclasses that inherit properties and behaviors from Animal.

## example of function overriding

Function overriding is when a subclass provides a different implementation of a method that is already defined in its superclass.
The method in the subclass must have the same name, return type, and parameters as the method in the superclass.
The method in the subclass must have a higher or same level of access as the method in the superclass.
Example: class Animal { void makeSound() { System.out.println('Animal sound'); } } class Dog extends Animal { void makeSound() { System.out.println('Bark'); } }

## What is oops. Explain.

Oops stands for Object-Oriented Programming. It is a programming paradigm that uses objects to represent and manipulate data.
Oops is a programming paradigm
It focuses on using objects to represent data and perform operations
It promotes code reusability, modularity, and flexibility
Examples of object-oriented programming languages include Java, C++, and Python

## DDL and DML difference

DDL is used to create, modify or delete database objects while DML is used to manipulate data within those objects.
DDL stands for Data Definition Language and includes commands like CREATE, ALTER, DROP, etc.
DML stands for Data Manipulation Language and includes commands like SELECT, INSERT, UPDATE, DELETE, etc.
DDL commands are used to create, modify or delete database objects like tables, indexes, etc.
DML commands are used to manipulate data within those objects like inserting new records, updating existing ones, etc.

**HR Questions**

How would you rate yourself in each of these languages in a range of 10?

Ans: Python- 8/10, C Programming- 7/10

What were your takeaways from TR (Technical Round)? Which areas do you need to improve?

AnswerBot 1y

Ninja's takeaways from TR and areas for improvement
Ninja learned the importance of communication and teamwork
Needs to work on decision-making under pressure
Should focus on improving building and editing skills
Needs to practice more on aim and accuracy

What was your biggest mistake in your life and how you overcame this?

Ans: I didn't know coding level is different for interviews since we didn't have seniors to guide us. When I got to know it, I started getting resources ASAP and overcame it.