ISSUE #7

CODECHEF-VIT NEWSLETTER

COMPETITIVE EDGE

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INTERVIEW Q & A

Given two strings A and B. The task is to find the min number of times A has to be repeated such that B is a substring of it. If no such solution exsits print -1.

Input: A = "abcd", B = "cdabcdab"
Output: 3
Repeating A three times ("abcdabcdabcd"), B is a substring of it. B is not a substring of A when it is repeated less than 3 times

Input: A = "ab", B = "cab"
Output : -1

```
def min_repetitions(a, b):
    len_a = len(a)
    len_b = len(b)

    for i in range(0, len_a):

        if a[ i ] == b[ 0 ]:
            k = i
            count = 1
            for j in range(0, len_b):

                # we are reiterating over A again and
                # again for each value of B
                # Resetting A pointer back to 0 as B
                # is not empty yet

                if k >= len_a:
                    k = 0
                    count = count + 1

                # Resetting A means count
                # needs to be increased
                if a[ k ] != b[ j ]:
                    break
                k = k + 1

            # k is iterating over A
            else:
                return count
    return -1

# Driver Code
A = 'abcd'
B = 'cdabcdab'
print(min_repetitions(A, B))
```

#What's Trending

Web Development Trends

1. Accelerated Mobile Pages (AMP)
2. Progressive Web Apps
3. Chatbots
4. Response Animation Idle Load (RAIL) concept
5. Motion UI
6. Single Page Applications
7. Static Website Generators
8. Illustration and Typography
9. Cyber Security
10. User Behaviour Tracking

Resources to help you out

Best VS Code Extensions:

1. Live Server
2. Prettier
3. Bracket Pair Colouriser
4. ESLint
5. Better Comments
6. Polacode
7. GitLens
8. Code Time
9. Leetcode
10. Window Colors

BLOG RECAP: Article from our members

Facebook buys startup working on mind control of machines

Mehul Agarwal
Core Committee member

At this age of modern technology where digital apps and social sites are created each day, Facebook's technology continues to manage a wide and rapidly increasing web of connections for its millions of users. The social networking giant, with a history of over 76 acquisitions in the past, inclusive of WhatsApp, Instagram, ConnectU, and others, continues to rule the charts as the best tech company.

But what's next?

In the light of "opening up new creative possibilities", Facebook believes in re-imagining the world of the 21st century. With the idea of implementing mind-reading technology into consumer products, Facebook recently acquired a neural interface startup CTRL-Labs worth around $1 billion. Capturing physical movement and controlling their devices through the same, these types of brain reading capabilities promise improvisation of the interactions between VR and AR in an intuitive way. The vision of this work is a wristband that would let people control their devices through their natural movements. The wristband would be capable of decoding the electrical signals, sent by our neurons to the muscles. These would further be translated into digital signals that our devices could interpret and thus, implement accordingly, as explained by Mr. Bosworth(head of AR and VR in Facebook). These signals would instruct your hand to move in a specific way, such as press a button or click the mouse. He further spoke of how thought-controlled movements or interactions could change the way people experience augmented or virtual reality.

Being the biggest ever acquisition for Facebook, the CTRL Labs wishes to create a technology based on a computer-brain interface which would empower the users to control their smartphones, computers and other digital devices without having to touch a screen or a keyboard. It would even let users type words and send messages using their brains. This acquisition substantially increases Facebook's investment in its hardware ambitions, further leading to its exponential growth altogether.

With the vision of working together, the goal is to revolutionize the world of computation, where people learn to connect better with the world around them.

Did you Know ?

1, 000 Computers are used by a single Google query in 0.2 seconds to retrieve an answer.

One Plus , WWF India to plant 27,333 trees

Dipto Chakrabarty
Core Committee member

13th September marked OxygenOs Oneplus's operating systems official 1,500 days. OnePlus switched to it is very own custom ROM OxygenOs after using the CynaogenOs for more than four years.

For Software built for phones, OxygenOs is simple and feels more like stock Android than any custom ROM. One of the main reasons why OxygenOs is termed as one of the best Android ROMs is due to the tons of customization options present in it.

The Company announced the 1500 days of OxygenOs with which OnePlus has launched a unique campaign in India to mark more than four years of its custom ROM.

> The advance of technology is based on making it fit in so that you don't really even notice it, so it's part of everyday life.
>
> **- Bill Gates**

Szymon Kopec, Product lead at OnePlus in a post on Friday announced the 1500 days mark on a post
"We're reaching another important milestone in our journey. 13th September 2019 marks the 1500th day of OxygenOS. It's been an amazing journey, building great products and software together with the OnePlus community.".

Not only did they announce the completion of 1500 days but also went ahead to start their new campaign partnering with WWF India "To commemorate this day, we want to do something special. So far, we've successfully been able to bring about positive change in the tech industry, as we created together with the community. Now, after 5 years of receiving constant contributions and feedback, we want to give back in a bigger way. This time we want to take this collaborative effort to the next level.

We're embarking on a mission to do our bit towards conserving nature and to make a contribution to the environment with the help of the OnePlus community, just like we did with tech.

OxygenOS is a clean and elegant OS that powers our smartphones and we wanted to mark this occasion by serving a larger cause. We named our operating system 'OxygenOS' because Oxygen, apart from having a clean and pure association, is that element we can't do without and constantly need to survive.

On the occasion of completing 1500 days of OxygenOS, we are partnering with WWF India and their Adopt a Tree campaign. Part of the international WWF (World Wide Fund for Nature) network operating in over 100 countries globally, the organization has been working on nature conservation and the reduction of human impact on the environment for the past 50 years."

On the occasion OnePlus has come up with a brilliant plan to help contribute to the environment, for every tweet of #OxygenOs a tree will be planted, this initiative will help in environment growth but will also excite and evoke other companies to do their part for the environment.

Wrapping up the event on 14th September OnePlus received 27,333 #OxygenOs tweets and as promised they wish to plant 27,333 trees along with WWF India.

This was an innovative way of celebrating the event of 1500 days of OxygenOS by OnePlus, not only did they manage to bring their community together for this initiative but also committed to helping contribute to the sustainability of the environment.

Google has the future figured out

Rishabh Bhandari
Core Committee member

Google has been lately working on a lot of products which they believe can change as well as shape our future. A lot of their investments and capital is going into the development of these products. They have created a whole new team of scientists, entrepreneurs and inventors which they like to call, X.

Google's X is actually a huge multi million dollar project where they create revolutionary new technologies to solve world's most arduous problems. Working with the latest and the most advanced technologies present to create even more advanced stuff. They dig deep into topics like Machine Learning, Artificial Intelligence, Virtual Reality, Humanoids, Super Computation, Energy Generation, Robotic Machinery, Bio Sciences, Cyber security and basically everything that can ensure you a better future.

Since its inception in 2010 X has developed many products, some of them are:

1) Self-Driving Cars: Mostly everyone today knows about Google's Self driving car which proves to be a milestone in this industry being the most advanced and successful. Not many know that it was developed by X under the project name “Waymo”.

2) Providing Internet: By some way or other Internet is changing an impacting our lives in a huge way possible, to some extent that we can’t even think of living or working without it. X is working under the project name “Project Loon”, towards developing weather balloons which will provide internet and Wi-Fi services to the most remote areas we can imagine even with the harshest topographies.

3) Smart Glasses: A project which is long due from Google is the smart glasses. The “Glass Enterprise Edition” project is where the X team is working on, however it’s basically more focused on the manufacturing and Field Workers’ use instead of the general public. It’s basically a glass which can fit into any helmet or shield that the worker must be using and providing information there on the glass only so as to maintain the focus of the worker. This will result in a much more precise and effortless work.

4) Artificial Intelligence: A subsidiary of X, “Google Brain” is responsible for all the AI and ML work that Google does. Brain’s team applies their insights to various Google products, enhancing them and making them more user friendly. Ranging from Google Translate, Android’s speech recognition system, search in Google Photos, video recommendations in YouTube, and more, bringing benefits of Artificial Intelligence to everyone.

5) Delivery Drones: Ever wondered from where Amazon got the idea of delivery drones? It was Google X who first proposed this project of creating UAV drones for delivery. Project named “Wing”, works for the development of these drones and increasing the access of goods to people even in the most remote places. These are self-flying drones flying at approximately 400ft from ground and using Machine Learning to find their way to the destination. They were also used in the floods that happened in the US last year, to provide food and supplies.