

CORONA VIRUS OUTBREAK NOTIFICATION SYSTEM

This program will give us the real-time update about the number of new cases, deaths, and the recovered cases of coronavirus according to time (after 1 hour or 2 hours) within a state. It will also provide information about how many of them are Indian national and foreign nationals.

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ABSTRACT:-

The episode of the Covid illness (COVID-19), brought about by serious intense respiratory condition Covid 2, spread worldwide after its rise in China. Regardless of whether rich or poor, all countries are battling to adapt to this new worldwide wellbeing emergency. The speed of the danger's rise and the brisk reaction needed from general wellbeing specialists and the actual public makes apparent the requirement for a significant change in pandemic observation and notice frameworks. The turn of events and execution of a reviewed, singular level pandemic warning framework could be a successful apparatus to battle future dangers of plagues. This paper depicts a model of such a notice framework and its likely benefits and difficulties for execution. Like other crisis cautions, this framework would incorporate various danger levels (level 1-5) with a more elevated level showing expanding seriousness and power of wellbeing measures (eg, level 1: general cleanliness, level 2: upgraded cleanliness, level 3: physical separating, level 4: cover set up, and level 5: lockdown). The warnings would be communicated to cell gadgets through instant message (for lower danger levels) or pop-up message (for higher danger levels). The notice framework would permit people in general to be educated about the danger level continuously and act appropriately in a coordinated way. New Zealand and the United Kingdom have as of late dispatched comparative ready frameworks intended to arrange the progressing COVID-19 pandemic reaction all the more effectively. Carrying out such a framework, in any case, faces numerous difficulties. Broad arrangement and coordination among all degrees of government and important areas are required. Moreover, such frameworks might be compelling essentially in nations where there exists in any event moderate trust in government. Advance and continuous state funded schooling about the idea of the framework and its means would be a fundamental piece of the framework, with the end goal that all individuals from people in general comprehend the significance of each progression ahead of time, like what has been set up in frameworks for other crisis reactions. This instructive segment is of most extreme significance to limit unfavorable public response and unintended results. The utilization of broad communications and neighborhood networks could be viewed as where cell phone infiltration is low. The execution of such a notice framework would be more difficult in agricultural nations for a few reasons, including deficient innovation, restricted utilization of information plans, high populace thickness, neediness, question in government, and inclination to disregard or inability to comprehend the notice messages. In spite of the difficulties, an individual-level pandemic warning framework could give added benefits by giving an extra course for notice that would be correlative to existing stages.

1 INTRODUCTION

1.1 PROBLEM DEFINITION:-

Before the finish of this venture, we will make customized Desktop notices utilizing python. we will actually want to adequately utilize distinctive python libraries to get information from the web, measure the information, and present the information as notices. In this task, we will make a Covid-19 news warning to assist with being constantly refreshed about the current circumstance.

1.2 PROJECT OVERVIEW:-

Because of the new Coronavirus episode in China, just as different nations in Asia, individuals from the remainder of the world are developing worried that the infection will proceed to spread and at last arrive at their country. As of the hour of composing this article, territory China has about 98% (more than 70,000) of the affirmed cases around the globe and the specialists are giving it their best shot to keep it contained. Yet, this doesn't mean we shouldn't remain arranged.

In this venture we will figure out how to program a "Realtime Coronavirus Outbreak Notification System" utilizing Python.

This program will give you the constant update about the quantity of new cases, passings, and the recuperated instances of Covid as per time (following 1 hour or 2 hours) inside a state. It will likewise give data about the number of them are Indian public and far off nationals.

As this is the work area notifier application, we will utilize the plyer module in our program. The Plyer module doesn't come worked in with Python. To introduce it remotely, compose the accompanying order on your terminal: `pip introduce plyer`.

1.3 HARDWARE SPECIFICATION:-

We will get notifications on our personal computers regarding latest corona virus cases.

Desktop notifications are visual notifications on your screen that alert you to incoming messages from visitors in Smartsupp chat. Desktop notification is shown even if you are browsing a different tab or you have opened another app, e.g. Microsoft Word. This way, you avoid missed conversations on your website. After you click on the desktop notification, chat with the visitor is opened in Smartsupp dashboard.

Requirements for Visual Studio Code

- 1.8 Ghz or faster processor. Quad core or better recommended.
- 2 GB of RAM; 8 GB of RAM recommended.
- Hard disk space: Minimum of 800 mb up to 210 GB of available space, depending on features installed; typical installations require 20-50 GB of free space.
- Hard disk speed: to improve performance.

1.4 SOFTWARE SPECIFICATION:-

Visual studio code:-

Visual Studio Code consolidates the effortlessness of a source code editorial manager with amazing designer tooling, as IntelliSense code consummation and troubleshooting.

As a matter of first importance, it is an editorial manager that moves. The wonderfully frictionless alter fabricate troubleshoot cycle implies less time tinkering with your current circumstance, and additional time executing on your thoughts.

Visual Studio Code includes a lightning quick source code manager, ideal for everyday use. With help for many dialects, VS Code causes you be in a split second gainful with linguistic structure featuring, section coordinating, auto-space, box-choice, pieces, and then some. Instinctive console alternate ways, simple customization and local area contributed console easy route mappings let you explore your code easily.

Visual Studio Code is a freeware source-code editorial manager made by Microsoft for Windows, Linux and macOS. Highlights incorporate help for troubleshooting, language structure featuring, canny code consummation, bits, code refactoring, and implanted Git. Clients can change the subject, console alternate routes, inclinations, and introduce augmentations that add extra usefulness.

Microsoft has delivered Visual Studio Code's source code on the microsoft/vscode (Code - OSS) storehouse of GitHub, under the tolerant MIT License, while the deliveries by Microsoft are freeware.

In the Stack Overflow 2019 Developer Survey, Visual Studio Code was positioned the most well known designer climate instrument, with 50.7% of 87,317 respondents detailing that they use it.

2. Literature Survey

2.1 Idea to create this project

COVID-19 (Coronavirus) has affected day to day life and is slowing down the global economy. This pandemic has affected thousands of peoples, who are either sick or are being killed due to the spread of this disease. The most common symptoms of this viral infection are fever, cold, cough, bone pain and breathing problems, and ultimately leading to pneumonia. This, being a new viral disease affecting humans for the first time, vaccines are not yet available. Thus, the emphasis is on taking extensive precautions such as extensive hygiene protocol (e.g., regularly washing of hands, avoidance of face-to-face interaction etc.), social distancing, and wearing of masks, and so on. This virus is spreading exponentially region wise. Countries are banning gatherings of people to the spread and break the exponential curve. Many countries are locking their population and enforcing strict quarantine to control the spread of the havoc of this highly communicable disease. The virus has already affected our life so much that we need to save our time in order to get done our primary job done on time.

We people literally spend our most of the time to check number of cases in country. Here, we software developers have to do something in order to save this precious time. Because we use internet to fetch the information or news about the number of cases. So, this notification system will help us to save this time by carrying out the number of cases on just one go.

1 Introduction

The exactness of customary determining generally relies upon the accessibility of information to base its expectations and assessments of vulnerability. In episodes of pestilences there is no information at all initially and afterward restricted over the long

haul, making expectations generally dubious. On February 18, 2020, a New York Times article [1] advised against over the top confidence about the emergency cresting, despite the fact that there were near 50 days since the infection had been recognized.

Furthermore, there are worries that the information may not be dependable, just like the instance of bird influenza and SARS when the quantity of influenced individuals and passings were distorted to conceal the degree of the scourge. Additionally, on account of COVID-19, the revealing didn't mirror the right numbers also when on the February 13 another classification of "clinically analyzed" was added to "lab-affirmed" ones [2]. Such issues decline determining exactness and increment vulnerability, making the making of positive inferences more troublesome.

Identified with estimating precision and vulnerability, there is a more extreme issue that needs to do the view of plagues and pandemics. Government officials are worried about respects to the actions to be taken while everyone fears about the effect on the scourge on their wellbeing/lives. Moreover, the drug firms are chipping away at immunizations for the new infection with significant business interest. This was the situation with SARS when governments convinced on the seriousness of the infection purchased enormous quantities of antibodies that were never utilized as its spread halted without the need to immunize individuals.

Obviously, the enormous issue is the lopsidedness of dangers and the unreasonable dread of a pandemic with its conceivable disastrous results, as occurred with the 1918 Spanish influenza that murdered an expected 50 million around the world. Interestingly, the SARS murdered an aggregate of 774 out of 2003 and the bird influenza around 100 of every 1997. Coronavirus has brought about an expected 5.8 thousand passings up to this point (15/03/2020). Simultaneously, there is substantially less worry over the occasional influenza that executes around 646,000 individuals worldwide every year [3].

Clinical forecasts are frequently not exact while their vulnerability is genuinely disparaged [4]. Anticipating the eventual fate of plagues and pandemics is substantially more troublesome as the quantity of cases to be examined can be estimated in one hand. Toward one side of the scale is the situation of SARS where the dread of turning into a pandemic was exaggerated, bringing about overspending and the utilization of prohibitive measures to be contained that it ended up being superfluous. At the opposite end is the Spanish influenza that ended up being a genuine pandemic with cataclysmic outcomes, ostensibly in an alternate period when correspondence and the capacity to raise public mindfulness (and perhaps overstated dread) were restricted.

Regardless of the mistakes related with clinical expectations, actually estimating is significant in permitting us to all the more likely comprehend the current circumstance and plan for what's to come. In this paper, we give measurable conjectures to the affirmed instances of COVID-19 utilizing strong time arrangement models, and we dissect the direction of recuperated cases.

2 Analysis and anticipating

We center around the combined day by day figures accumulated universally of the three primary factors of interest: affirmed cases, passings and recuperations. These were recovered by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins

University (<https://github.com/CSSEGISandData/COVID-19> got to on 12/03/2020) and are introduced in Fig 1. The information allude to every day combined cases and cover the time frame from January 22, 2020 until March 11, 2020. We incorporate both "lab-affirmed" and "clinically analyzed" cases. We accentuate the significance of the recuperated cases, which isn't shrouded in media as broadly as the affirmed cases or the passing. While each of the three information designs show an outstanding increment, the patterns of both the affirmed cases and the passing's were decreased in the mid of February; a subsequent remarkable increment is seen in late February and March because of the expanded number of cases in South Korea, Iran, and Europe. Simultaneously, the quantity of recuperated cases is consistently expanding.

To conjecture affirmed instances of COVID-19, we embrace basic time arrangement estimating approaches. We produce conjectures utilizing models from the dramatic smoothing family [5, 6]. This family has shown great gauge precision more than a few guaging rivalries [7–9] and is particularly appropriate for short arrangement. Dramatic smoothing models can catch an assortment of pattern and occasional anticipating designs (like added substance or multiplicative) and blends of those. We limit our regard for moved and non-occasional models, given the examples saw in Fig 1. Note that we follow a logical methodology in that we expect that the pattern will proceed with inconclusively later on. This methodology negates other demonstrating ways to deal with COVID-19 utilizing a S-Curve model (coordination's bend) that accepts union.

While factual ways to deal with model choice (like data standards, which measure the greatest probability of a model while punishing for its intricacy) could be utilized, we critically select a model [10] to more readily mirror the idea of the information. We settle on an outstanding smoothing model with multiplicative blunder and multiplicative pattern parts. Regardless of whether sometimes an added substance pattern model gave lower data measures esteems, we picked the multiplicative pattern model given the deviated hazards implied as we accept that it is smarter to fail to the positive bearing.

We produce ten-days-ahead point figures and expectation stretches and update our conjectures at regular intervals. If it's not too much trouble, note that this is certifiably not an ex-post investigation, yet a genuine, live estimating exercise. We have been posting and assessing our figures openly in online media (kindly, allude to the Twitter records of the creators, @fotpetr and @spyrosmakrid).

First round of conjectures: 01/02/2020 till 10/02/2020

We initially began toward the finish of January 31, 2020 and just had ten genuine information focuses close by. We chose to utilize a multiplicative pattern dramatic smoothing model. The estimates (and 90% forecast spans) created toward the finish of 31/01/2020 are introduced in Fig 2 with red (and pink) shading. Note that the vertical pivot is log-scaled. The mean gauge (point figure) for the affirmed cases ten-days-ahead was 209 thousand with the 90% forecast stretches going from around 38 to 534 thousand cases. The real affirmed cases on 10/02/2020 were just shy of 43 thousand. We notice an impressive conjecture blunder from the mean gauge equivalent to 166 thousand cases (a flat out rate mistake of 388%), with the estimates being very emphatically one-sided. In any case, the real cases exist in the expectation spans.

Second round of figures: 11/02/2020 till 20/02/2020

At that point, we expanded the authentic number of our information to incorporate cases up to the furthest limit of February 10, 2020 (20 information focuses). We by and by delivered ten-days-ahead forecasts. The estimates and forecast stretches are portrayed in Fig 2 with blue tone. We see that the real qualities for the time frame 11/02/2020 until 20/02/2020 intently follow the mean gauge. The figure blunder on 20/02/2020 was 5.8 thousand cases (a flat out rate mistake of 7.7%). This was notwithstanding the change that was made on 13/02/2020 with respect to how affirmed cases are recorded to now incorporate "clinically analyzed" examples instead of solely lab-affirmed. One vital perception is that this more exact gauge accompanied a huge abatement in the steepness of the slant contrasted with the conjecture for the past ten-days time frame. Another perception is that toward the finish of 20/02/2020, we were still over-anticipating the quantity of affirmed cases. At long last, all real qualities lied well inside the forecast stretches range.

Third round of gauges: 21/02/2020 till 01/03/2020

We delivered a third arrangement of figures and expectation spans utilizing the information up until 20/02/2020. The gauges are introduced in Fig 2 with green tone. The mean gauge for ten-days-ahead (01/03/2020) was 83 thousand cases. The slant of the gauges was, by and by, lower contrasted with the past two arrangements of figures, affirming the way that the noticed affirmed cases (up until 20/02/2020) show a consistent abatement. We likewise noticed a huge abatement in the related conjecture vulnerability, with the expectation stretches being a lot more tight contrasted with our past gauges. The 90% expectation spans most dire outcome imaginable was around 600 thousand cases, which is split contrasted with that of the last round of figures (1.2 million cases). The genuine affirmed cases toward the finish of 01/03/2020 were 88 thousand. Toward the finish of this third round of estimates, we recorded a blunder of 5.5 thousand cases (6.2%). While this blunder was lower than the past round (in both total and rate terms), it was the first occasion when that our 10-days ahead figure were underneath the genuine qualities (under-gauging). This was on the grounds that the infection had been spreading in three nations outside Mainland China (South Korea, Iran, and Italy).

Fourth round of figures: 02/03/2020 till 11/03/2020

Our fourth round of gauges is appeared in Fig 2 with purple tone. The mean gauge for 11/03/2020 was 112 thousand affirmed cases, with the vulnerability levels being like the past round: There was a 5% possibility that they would surpass 613 thousand before the finish of 11/03/2020. The noticed genuine affirmed cases toward the finish of this period were right around 127 thousand. The supreme conjecture blunder toward the finish of the last time frame (11/03/2020) was 15.4K (12.1%), higher contrasted with the past set of estimates yet at the same time well inside the forecast spans. For the second round in succession, we were reliably under-anticipating the genuine cases. This was because of the outstanding increment of the affirmed cases generally in Europe, Iran and the US, with South Korea figuring out how to diminish the quantity of new day by day cases fundamentally.

Fifth round of estimates: 12/03/2020 till 21/03/2020

We created a last arrangement of figures and expectation stretches utilizing the latest

information, up until 11/03/2020. These are introduced in Fig 2 with yellow/gold tone. Note that we assessed three degrees of vulnerability (50, 70 and 90%). The pattern of our conjectures is abundantly expanded contrasted with the last two rounds: We anticipate 83 thousand new cases for this cycle (an aggregate of 210 thousand cases). The related degrees of vulnerability are likewise expanded: There is a 25% possibility that the complete affirmed cases will surpass 413 thousand before the finish of 21/03/2020; and a 5% possibility that they will surpass 1.19M.

We likewise endeavored to create gauges by parting the recorded affirmed cases into two gatherings: cases inside Mainland China and cases elsewhere, as the patterns into these two gatherings are unique. We fitted free outstanding smoothing models, and afterward we summarized the figures (base up various leveled guaging). We notice that utilizing this methodology, the mean gauge is near that if all information are viewed as together (207 versus 210 thousand cases). Be that as it may, the assessed vulnerability by parting the information is impressively lower, perhaps since the affirmed cases outside Mainland China have fundamentally expanded as of late.

Recuperated cases

We next direct our concentration toward the recuperated cases that have gotten little consideration up to this point. We center around the quantity of the recuperated cases as a level of the all out affirmed cases just as the proportion of recuperated cases versus passings. We are especially inspired by the direction of these two proportions. Fig 3 presents this investigation. In the first place, we notice the strong connection between the two bends. Second, we notice that notwithstanding the little rates of recuperated cases until the finish of January (under 2%), right now, around 1 out of 2 affirmed cases have recuperated (52.8% of the absolute affirmed cases). In addition, the proportion of recuperated cases versus passings is presently above 14:1. In spite of this, we notice an opposite of the two bends since 08/03/2020, which is related with the expanding number of cases outside Mainland China.

3 Discussion and end

The vulnerability encompassing an obscure, novel Covid can start a worldwide caution, driving a Harvard Professor expressing that 40-70% of the worldwide populace may be tainted in the coming year [11] which matches Chancellor Angela Merkel's admonition in regards with the impacts of the novel Covid in Germany [12]. Norman, Bar-Yam and Taleb [13] talk about the fundamental danger of pandemics, the presence of fat-followed measures because of worldwide interconnectivity and the contrarily one-sided assessments of spread, generation and death rates. On the contrary side, others are squabbling over individuals excessively freezing [14] and disregarding the probabilities [15, 16] with the new infection being the first "infodemic" because of the hyper-availability offered by the present online media [17, 18]. The polarization of the suppositions universally can be summed up by the statements of three eminent characters:

Elon Musk: "The Covid alarm is stupid" [19].

Nassim Nicholas Taleb: "Saying the Covid alarm is stupid is imbecilic" [20].

Bill Gates: "I trust it isn't so awful, yet we ought to accept it will be until we know in any case." [21].

Notwithstanding what one's convictions are, we accept that gauges and their related vulnerability can and ought to be an indispensable piece of the dynamic cycle, particularly in high-hazard cases. Aside from the huge general wellbeing concerns, the threats forced on worldwide stockpile chains and the economy all in all are likewise significant [22, 23]. Hazard disinclined individuals can zero in on the most pessimistic scenario situations and act in like manner. Choosing to dispose of any formal, measurable estimates and acting moderately, still suggests a hidden gauging measure, regardless of whether this cycle isn't formalized (individual judgment/conviction).

In this activity, we utilized univariate time arrangement models, which accept that the information is exact and past designs (counting careful steps) will keep on applying. Huge, steady conjecture mistakes (possibly spreading over external the expectation spans) ought to be related with changes in the noticed examples and the requirement for extra activities and measures on account of adversely one-sided estimates.

We accept that the critical estimate blunder toward the finish of the previously conjecture period (from 01/02/2020 to 10/20/2020) as portrayed in Fig 2 could be the aftereffect of two components:

While the gauges that we delivered utilizing the information up until 31/01/2020 would be a decent gauge in the situation of "the same old thing" (nothing transforms), they dismiss the way that the world will act to get the infection leveled out. The Chinese specialists figured out how to quickly build two new medical clinics, in Huoshenshan and Leishenshan territories in Wuhan, that opened on 03/02/2020 and 08/02/2020 separately. Different driving limitations were applied both inside China and globally. The World Health Organization helped in making attention to the novel infection. Thus, the decrease in the spread of the COVID-19 during this initially round could well be connected with these endeavors from neighborhood and worldwide specialists.

There might be a "trash in, trash out" circumstance. As referenced over, our examination and conjectures expected that the information are precise. It very well may be the situation that the positive inclination of the primary time frame estimates isn't pretty much as critical as it appears contribution to possible mistakes in the real information and the under-bookkeeping of affirmed cases. This is particularly evident given the postpone impacts in diagnosing COVID-19 cases [24].

Our second and third arrangements of conjectures that cover the time frame 11/02/2020 to 01/03/2020 were near the recorded affirmed cases (the figure blunder was lower than 6 thousand cases toward the finish of every 10-day duration). The easing back down of the pattern during this period recommended that COVID-19 would not reason any significant issues, especially outside of Mainland China. Tragically, that was not the situation. The last two arrangements of gauges that cover the time frame 02/03/2020 to 21/03/2020 show a critical expansion in the pattern of cases around the world combined with an increment in the related vulnerability. We trust that our estimates will be a helpful device for governments and people towards settling on choices and making the fitting moves to contain the spreading of the infection to the degree conceivable.

2.2 Proposed Project outline and expectations

We are planning to create a program using python language to show information about COVID-19 cases instantly. It is necessary to have an internet connection to update the instant cases. It is an effective method to make a notification system. Reasons behind it are as follows:

- i. Saving time of user in terms of open the application program again and again.
- ii. Notification bar will pop up and without interrupting user, it will show the current cases.
- iii. Notification bar will stay for few seconds, as we want that user easily read information.
- iv. User can also cancel if he is busy or want to do so.

2.3 Project overview

The project is created as expectations. All the required features have been added in the program. Notification bar pop up in the interval we have set for the system. Notification bar is working well with all the details. Notification system is doing the following tasks:

- i. It is just like normal pop-up bar for Windows 10 users.
- ii. The system is containing all the information related to the COVID-19 cases currently.
- iii. Whenever user is not free, he/she can cancel the notification.
- iv. The system required the Internet connection to fetch the data from the official government site.

2.4 Drawback of current project

As we know Python is a script-based programming language. If we want to run our program, we can't do it directly. We have to copy paste source code every single time we want to run our program. In order to overcome this drawback user, need to download one module name "pyinsataller".

This module will create an executable file for our project and can be run in the background.

2.5 Update of project

The update of project is based on the outcome or reviews by users. If they like our project for COVID-19, then we can update the projects in many possible ways. Few updates can be listed as follows:

- i. The update can be like if user want to take information of any particular state.
- ii. User can choose what information, he/she want to fetch after installing the set up.
- iii. User can have many options for sleep time of the notification pop-up.
- iv. User can choose their own preferences of colours of text and other graphical content.
- v. We can create multiple set of options just like COVID-19 in our update or as per suggestions provided by users.

PROBLEM FORMULATION

During software development, clones can occur in software intentionally or unintentionally. Developers tend to clone fragments of software during development to save efforts and expedite the development process of coronavirus outbreak notification system.

RESEARCH OBJECTIVES

The proposed research is aimed to carry out work leading to the development of an approach for real-time coronavirus outbreak notification system. The proposed aim will be achieved by dividing the work into following objectives:

1. This system will keep us up to date regarding cases of coronavirus.
2. It will save time as not every time we need to visit the site to know number of cases and deaths due to corona virus.
3. This program will also give us update about number of recovered cases of coronavirus according to time within a state.
4. It will also provide information about how many of them are Indian and foreign nationals.
5. Whenever there is any updation in number of cases, deaths or recovered cases it will pop up and will provide information.

Now-a-days people spend most of their time in searching for the number of cases about new patients or deaths in their state. This program will not only help them by providing real-time updates but also by saving their time.

METHODOLOGY

The following methodology will be followed to achieve the objectives defined for proposed research work:

1. Detailed study of python programming language and plyer module will be done in our program.
2. Installation and hand on experience on existing approaches of plyer module will be done.

Relative pros and cons will be identified.

The plyer module does not come built-in with python. To install it externally, write the following command on your terminal:

```
pip install plyer
```

3. Various parameters will be identified to evaluate the proposed system.

Comparison of new implemented approach with exiting approaches will be done.

TENTATIVE CHAPTER PLAN FOR THE PROPOSED WORK

CHAPTER 1: INTRODUCTION

This chapter will cover the overview of Real-time coronavirus outbreak notification system.

CHAPTER 2: LITERATURE REVIEW

This chapter include the literature available for coronavirus The findings of the researchers will be highlighted which will become basis of current implementation.

CHAPTER 2: BACKGROUND OF PROPOSED METHOD

This chapter will provide introduction to the concepts which are necessary to understand the proposed system.

CHAPTER 4: METHODOLOGY

This chapter will cover the technical details of the proposed approach.

CHAPTER 5: EXPERIMENTAL SETUP

This chapter will provide information about the subject system and tools used for evaluation of proposed method.

CHAPTER 6: RESULTS AND DISCUSSION

The result of proposed technique will be discussed in this chapter.

CHAPTER 7: CONCLUSION AND FUTURE SCOPE

The major finding of the work will be presented in this chapter. Also directions for extending the current study will be discussed.

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