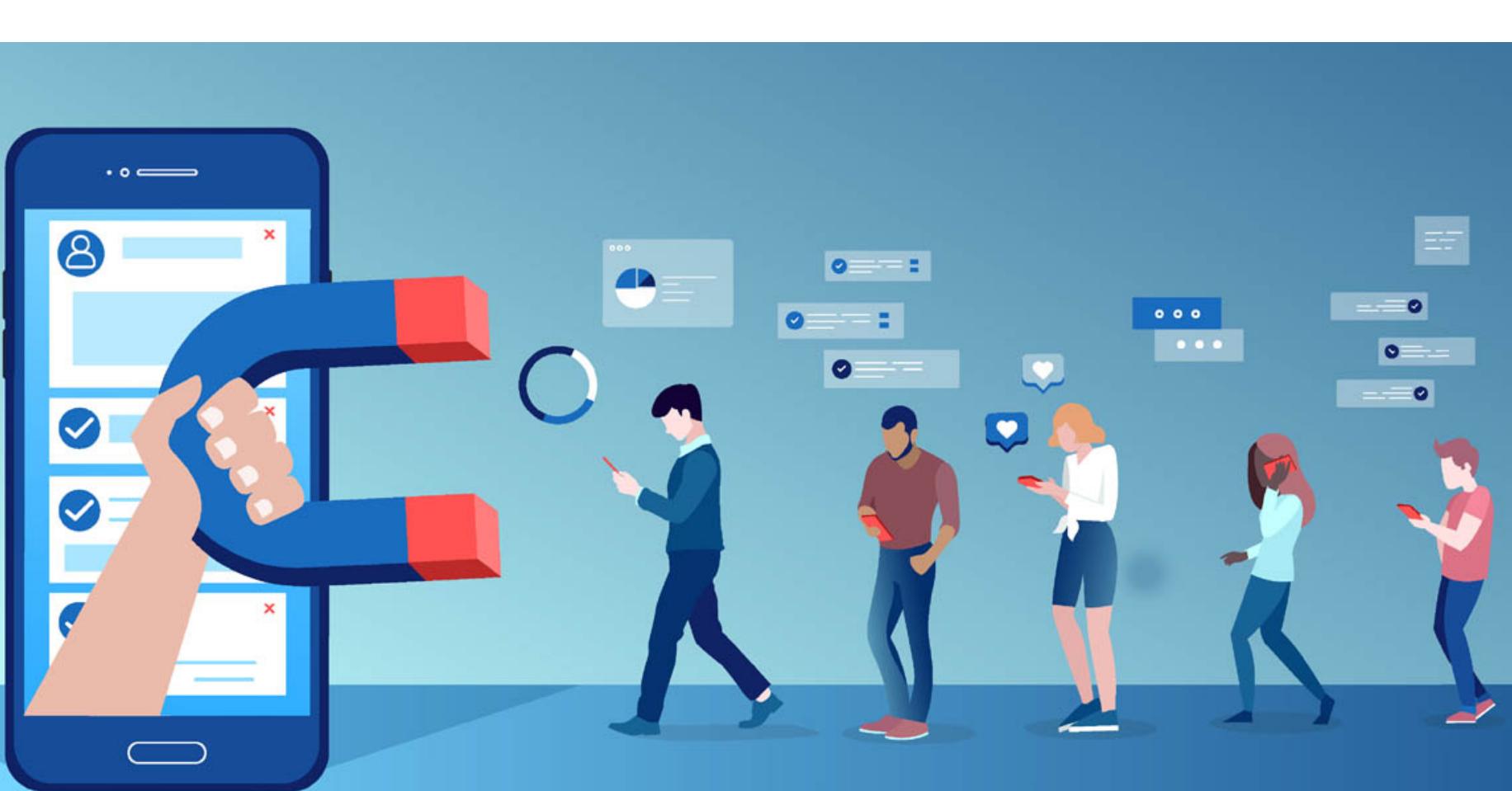


Final Project Presentation

CS - F315 ICTD



Topic:

Social media platforms have become a breeding ground for misinformation and disinformation.

The Problem

- In this digital age, when most of us have access to all of the human knowledge at our fingertips, most of us are wrong a lot of the time.
- Multiple contradicting sources, lack of awareness about whom to trust.
- This has led to social media becoming a breeding ground for rampant misinformation.



Solution

FACT CHECKING

Use Google Fact Checking API to determine the veracity of a piece of information. (flexible)

FILTERING

Use Global keyword based filters to flag certain posts and present the user with information from a trusted source.

PROVIDE METRICS

Use metrics like history of the source, number of forwards, trends etc.

Timeline followed

(Complete)



SEPT - 4TH WEEK

Research and Review
the various ways to
use APIs to fact check
and extract keywords.

NOV - 1ST WEEK

Develop the application
keeping in mind the needs
of the user. Develop the
backend system to
support the application.

NOV - 4TH WEEK

Conduct user surveys
on the application and
backtrack to step 2, to
improve the
application.

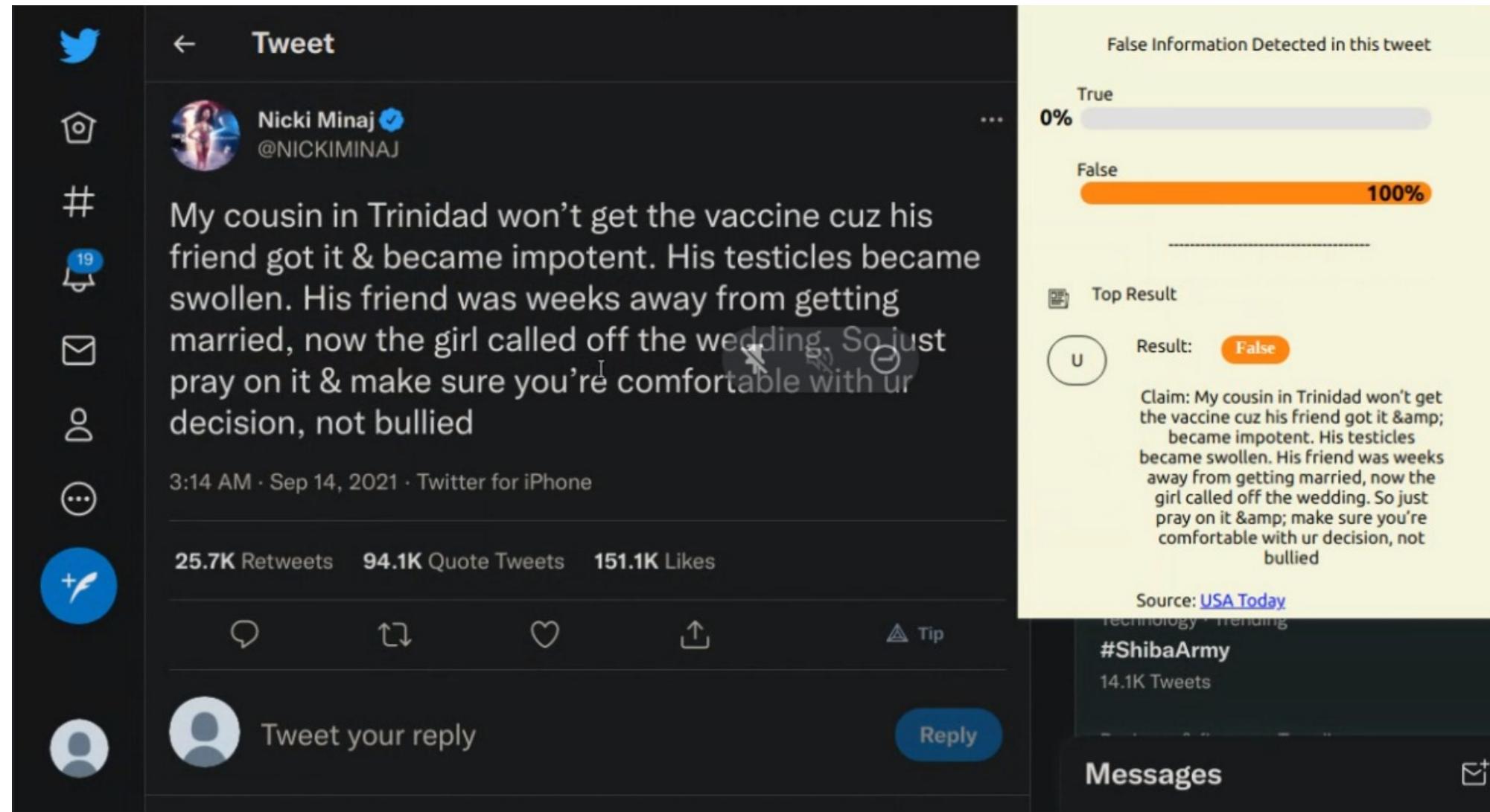
Work Done

Research and Review

We decided to focus on twitter as it is one of the hottest breeding grounds of misinformation spread by fake experts. We studied the **Twitter API v2** and understood how to fetch tweet data from it. We also went through similar projects that have been done in the past to get some ideas and also to see how we can improve upon them in our product.

Work Done

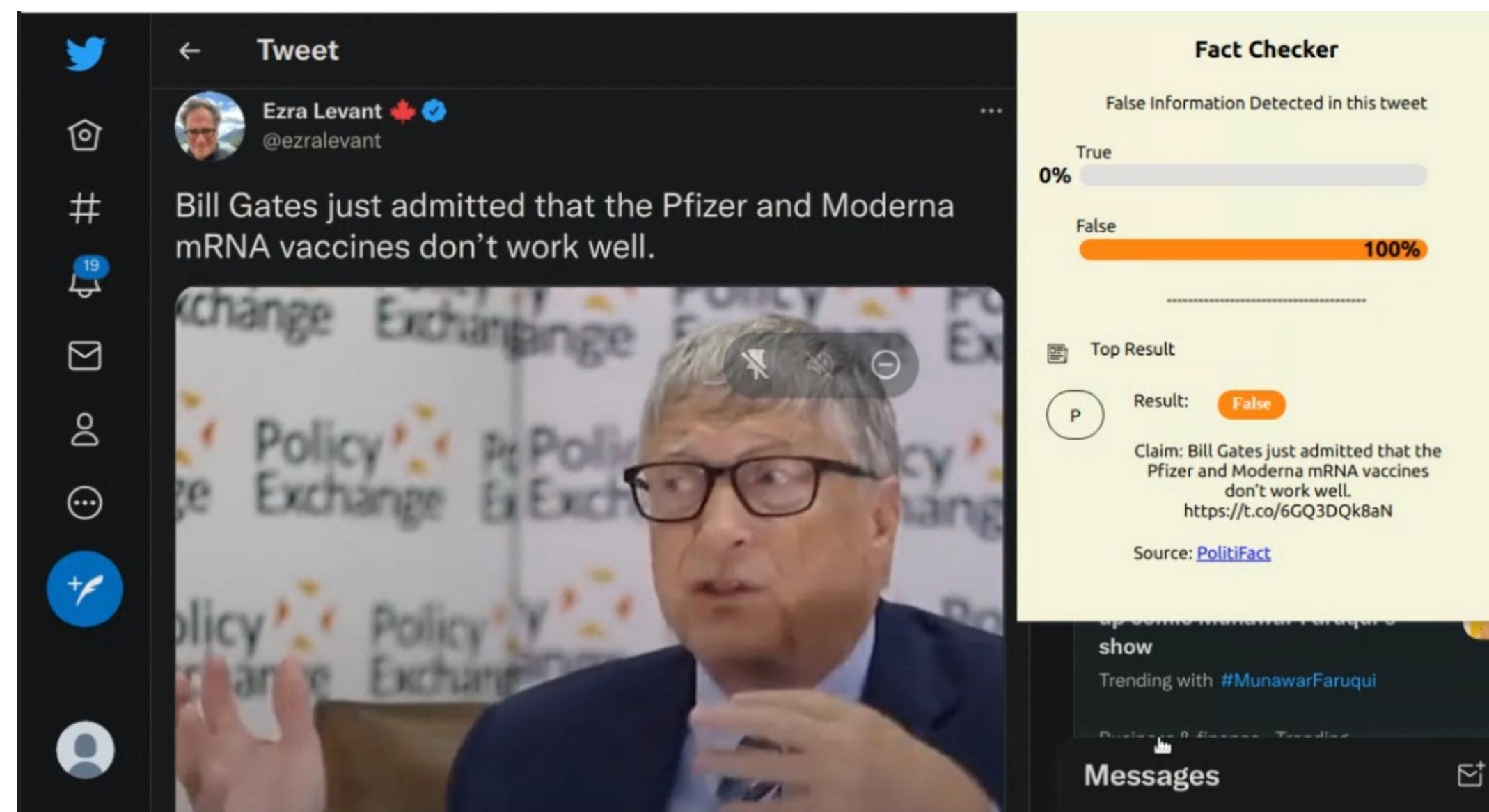
Fact Checker Extension



We developed a browser extension that scans the tweet in a given tab and checks if it has any misleading information and if it does, it displays it. It also provides reliable and trustworthy sources to back up the claim.

Work Done

Fact Checker Extension



Here is one more example of the extension in action

Work Done

The Quiz Application

The image shows a mobile application interface for 'Facts Chamber'. At the top, the title 'Facts Chamber' is displayed in large, bold, blue letters. Below the title, a subtitle reads 'Take a quiz to test your ability to tell fake news from real news'. A yellow button labeled 'Take quiz' is located at the bottom left. The main area features a search bar with the placeholder 'Search for trending topics here' and a magnifying glass icon. Below the search bar, there is a section titled 'Trending Topics, example Monkey' with four statements and their percentages:

Statement	Percentage
Monkeys are mammals	99%
Monkeys are real	99%
Monkeys are extinct	03%
Monkeys like bananas	50%

We decided that the application will have a gamified approach to interact with users as it is one of the most effective approaches to get people's attention, which is critical to help them overcome in case they are misinformed on the topic. The user will first enter a topic, then they will be shown various statements constructed using data from tweets.

Work Done

The Application

When the user clicks on one of the statements, they will be presented with a quiz as shown in the screenshot here. They will be presented with a statement and they must pick whether it is true or not. And they will be given a point if the answer is correct.

A screenshot of a mobile application interface. The top bar is dark grey with the text "Category: Medicine". Below it, the question is displayed: "Q2 of 10: Homeopathic medicine, Eupatorium Perfoliatum 200 CH can cure dengue within 2 days." Two options are shown: "True" and "False".

Work Done

The Application

The questions are selected in such a way that it challenges the intuition of the user a lot. This question for example intuitively feels like a typical fake fact that originates in twitter and spreads in WhatsApp groups.

But it is actually true.

Category: Space

Q5 of 10: Nasa is installing internet on the moon

True

False

Work Done

The Application

On the other hand typical misleading facts that originate from studies that don't follow a good method are also included. It is vital that people are informed to be vary of such facts as inclusion of a source can make something look that much more real, regardless of how reliable the source is.

Category: Health

Q8 of 10: Coffee can help cure cancer

True

False

Work Done

The Application

At the end of the question the users will be able to see their total score and also an explanation for every question they were asked. The sources to the explanations will also be provided.

Your score is **9 (out of 10)**. Red indicating questions you answered incorrect.

Question1: **Vir Das' middle name is Abdullah and is secretly a nigerian. Correct answer: false**

Do you know: Vir das is Indian and has only one middle name, Saran.
<https://twitter.com/thevirdas/status/721949481172774913>

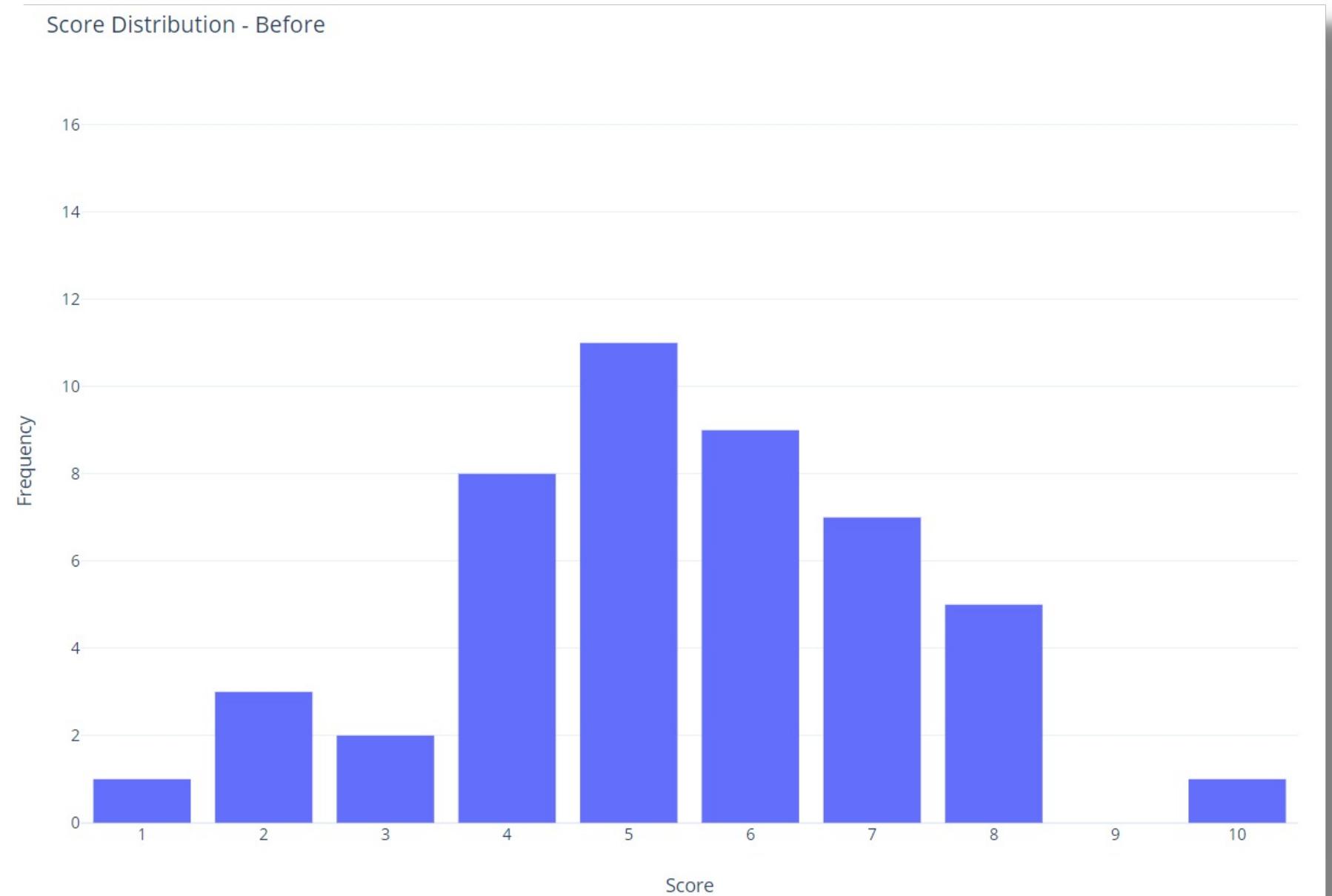
Question2: **Homeopathic medicine, Eupatorium Perfoliatum 200 CH can cure dengue within 2 days. Correct answer: false**

Do you know: While the medicine is prescribed for dengue fever, the claim that it can cure the disease in two days is false. The Quint contacted the president, Indian Homoeopathic Medical Association, Dr Piyush Joshi, who reiterated the same. According to Dr Joshi, Eupatorium Perfoliatum 200 CH might be one of the medicines that can work in the treatment of Dengue fever but it can't be the only medicine for treating the disease.

Work Done

The Survey

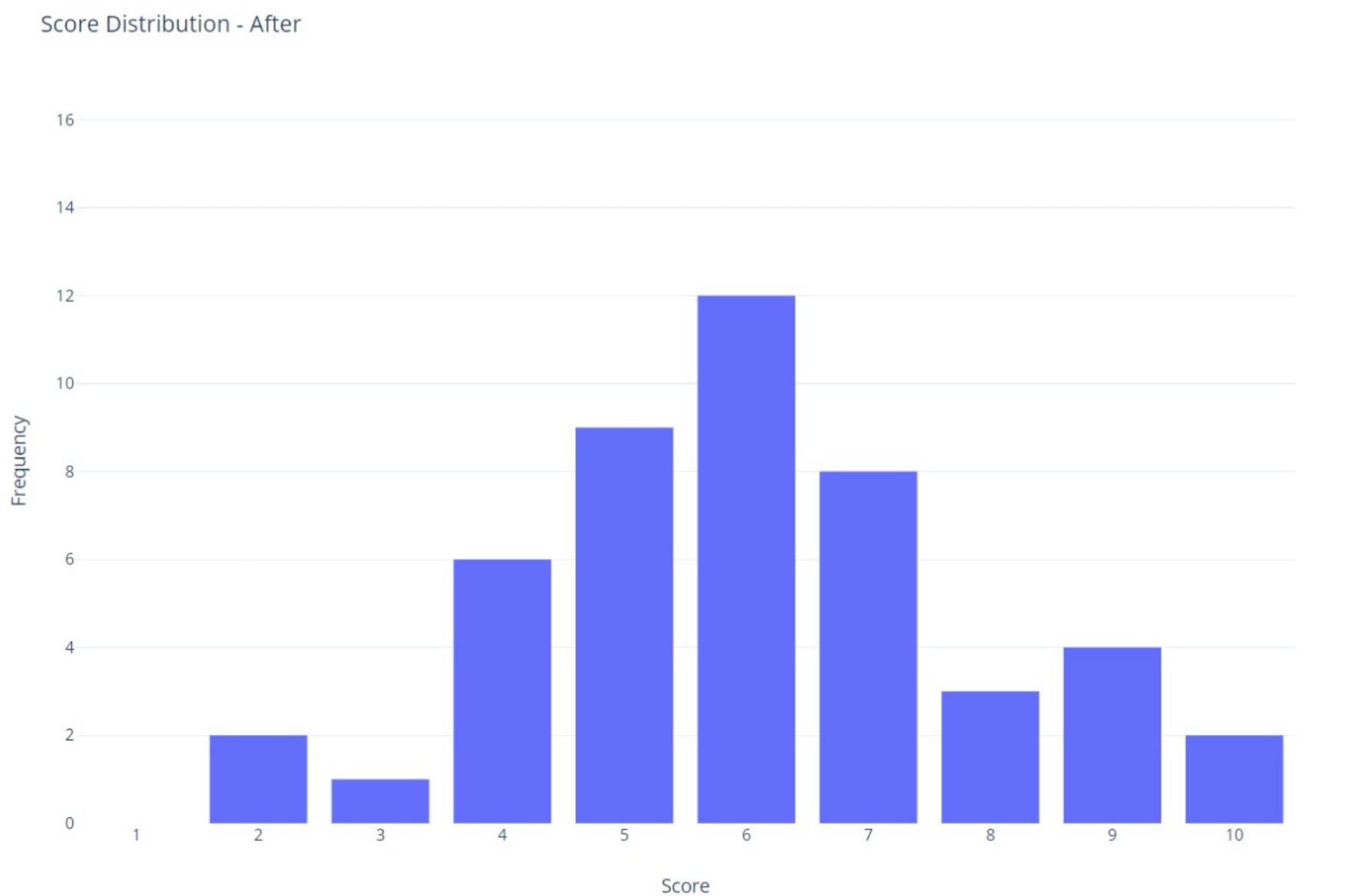
Here is the distribution of the score of people who took the quiz **before** using our fact checker. The average score came out to be 5.38 out of 10.



Work Done

The Survey

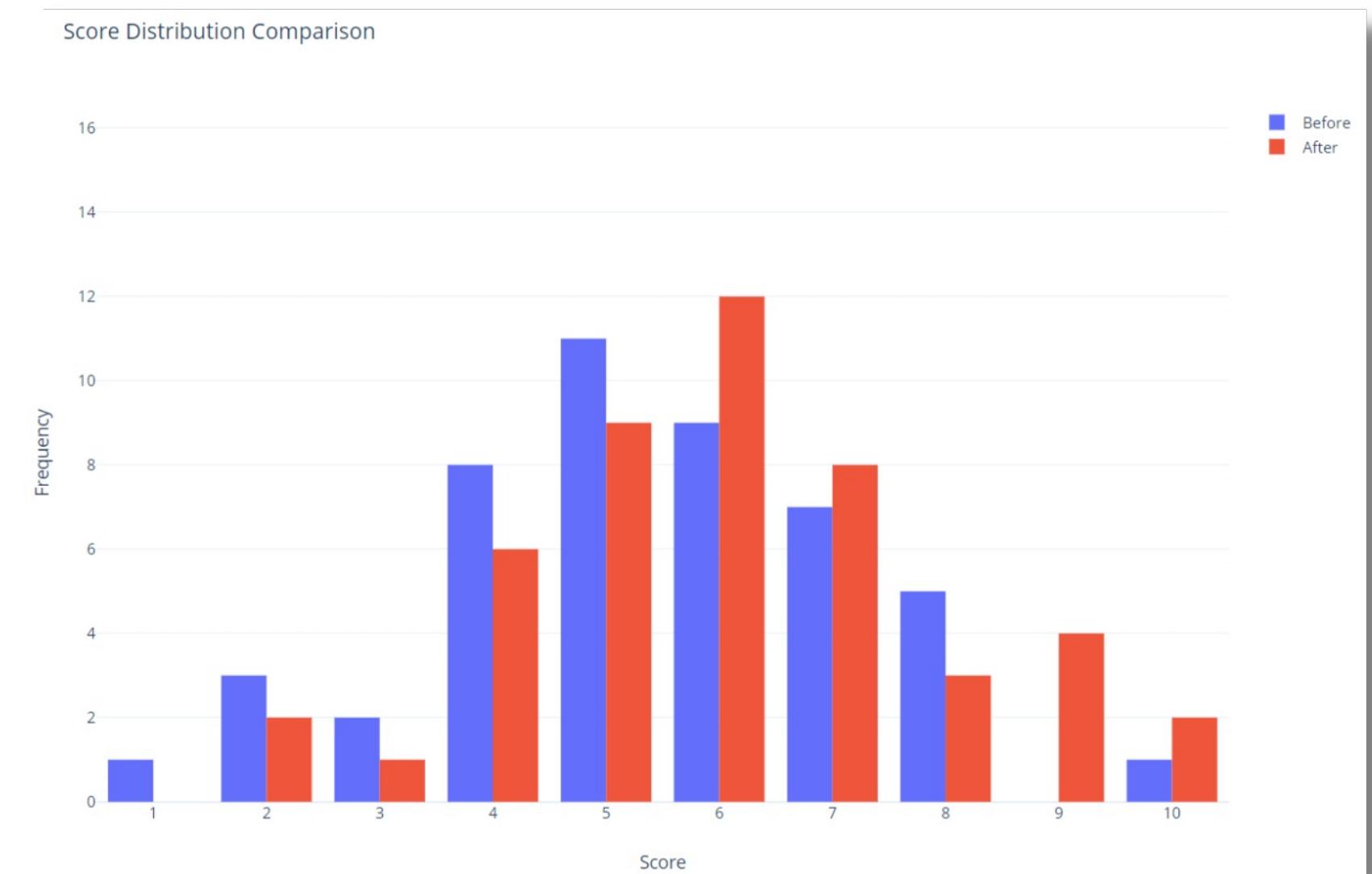
Here is the distribution of the score of people who took the quiz **after** using our fact checker. The average score came out to be 6.04 out of 10.



Work Done

The Survey

Here is the comparison of the score frequencies [before](#) and [after](#). We can see that there are very few people who scored 3 or after using the extension and on the contrary there has been an significant increase in people who scored 9 and 10

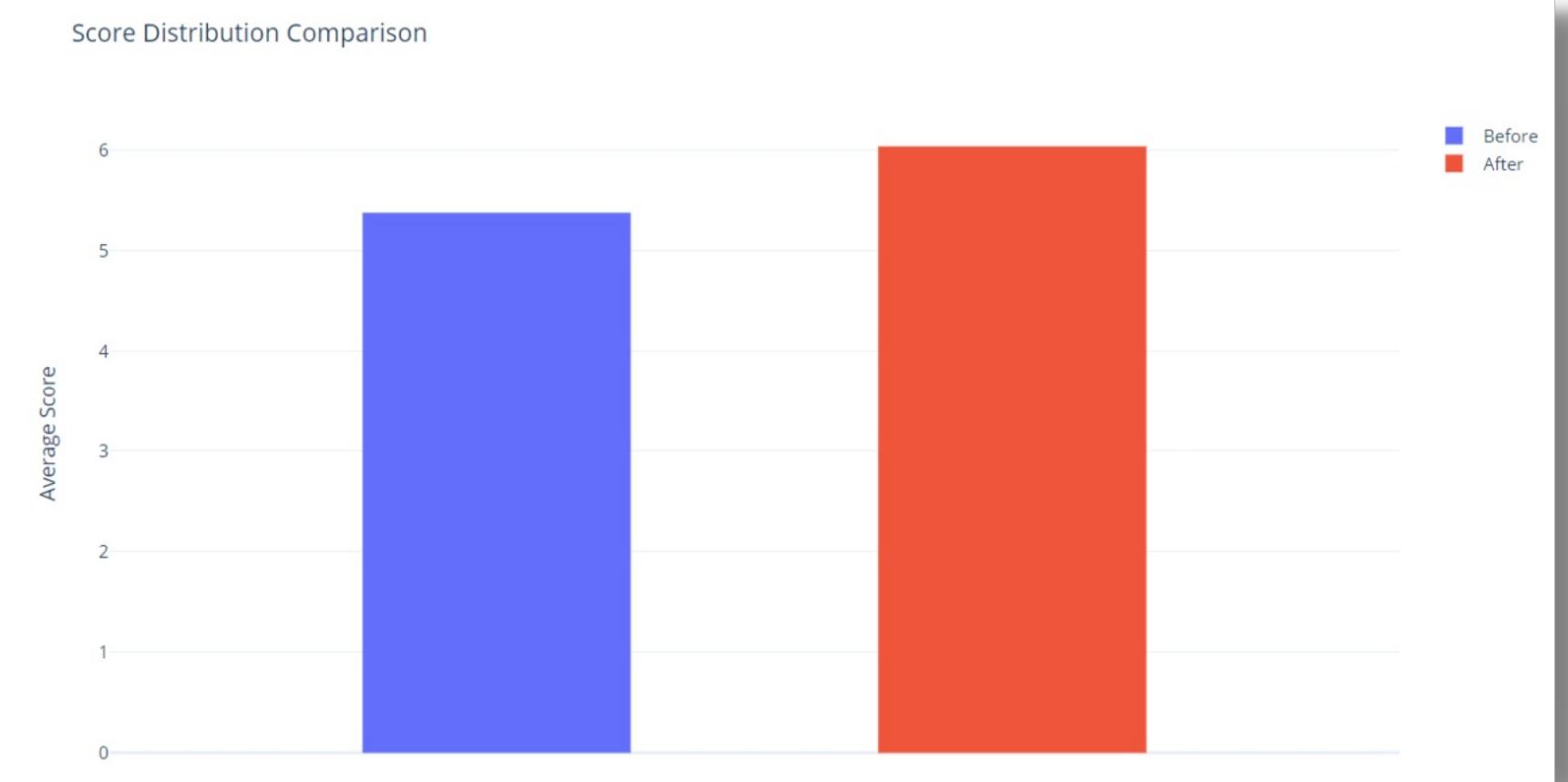


Work Done

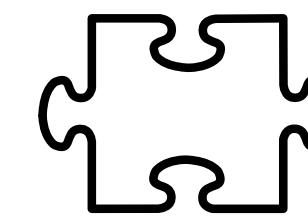
The Survey

Here is average score **before** and **after** the use of the extension - 5.38 vs 6.04

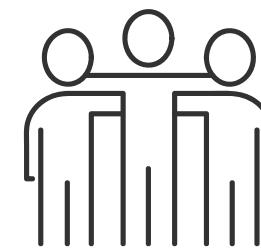
Although this is not a dramatic result, it is a 12% increase in average score, which is significant at a large scale and overall creates a net positive impact.



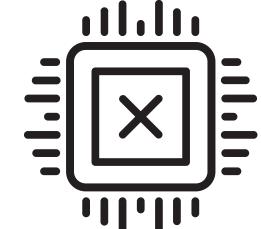
Conclusions and Inferences



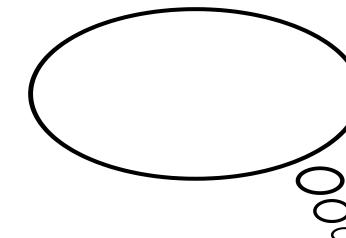
Difficulty



Collective Responsibility



Cannot be automated



Self Sufficiency

Difficulty

- While working on this project, we realised the sheer difficulty of the task at hand.
- It is too easy and tempting to just believe in whatever you read online
- There are parties that benefit from this spread of misinformation.
- People won't start believing any new claim if it goes against their inherent beliefs and preconceptions, and are willing to resist any change in the status quo.

Collective Responsibility

- Given the difficulty and the scale of the task, there is no one-size-fits-all solution to it.
- Tens of thousands of WhatsApp messages and social media posts spreading false information are shared every day. And if it is shared by someone they trust, people can easily be prejudiced into believing it.
- That's why everyone has their own role to play in preventing the spread of false information, not believing everything they see online, and spreading awareness.
- Even a small amount of competence by the general public can show better results than any artificial solution ever can.

Cannot be Automated

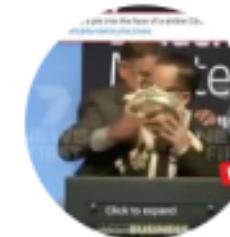
- Working with the Google fact-check API in the past few weeks, we came to a realisation-- fact-checking is a task that is almost impossible to automate.
- The way the fact check API works is that it compiles the results of fact-checking done by independent news outlets and other agencies over the years.

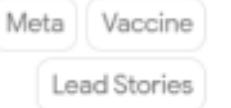
Fact Check Explorer

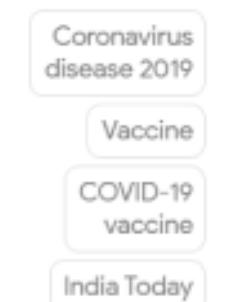
Vaccine 

English 

 Claim by facebook.com:
A chef must know all ingredients of a cupcake, but a doctor doesn't need to know the ingredients of the vaccines.
Lead Stories rating: Easily Found
[Fact Check: vaccine ingredients Are NOT Kept From Doctors, While Chefs Know All Cupcake Contents As Allergy Precaution](#)
2 days ago

 Claim by Social media user:
A man publicly puts pie on the face of an airline CEO who mandated the Covid vaccine for all his employees.
India Today rating: Mostly false
[Fact Check: This man did not attack airline CEO for mandating Covid vaccine](#)
2 days ago

 Meta Vaccine Lead Stories

 Coronavirus disease 2019 Vaccine COVID-19 vaccine India Today

Cannot be Automated

- Since the fact check API only "compiles" the work of other agencies, it's not flexible, i.e. you cannot just type in any fact you want to check and expect to see a result.
- The only verified facts available in the API are the ones that were able to stir up enough criticism to make it worthwhile for the news agencies to cover and check them.
- Is not instantaneous. If some obscure headline appears right now, you cannot use the fact check API to check it until a third-party independently checks and publishes it.
- All this goes to show how difficult automatic fact-checking is. Human intervention is a critical part of the process.
- Even if someone is able to make a Machine Learning model, it won't be reliable unless its 100% accurate, and human intervention will still be important.

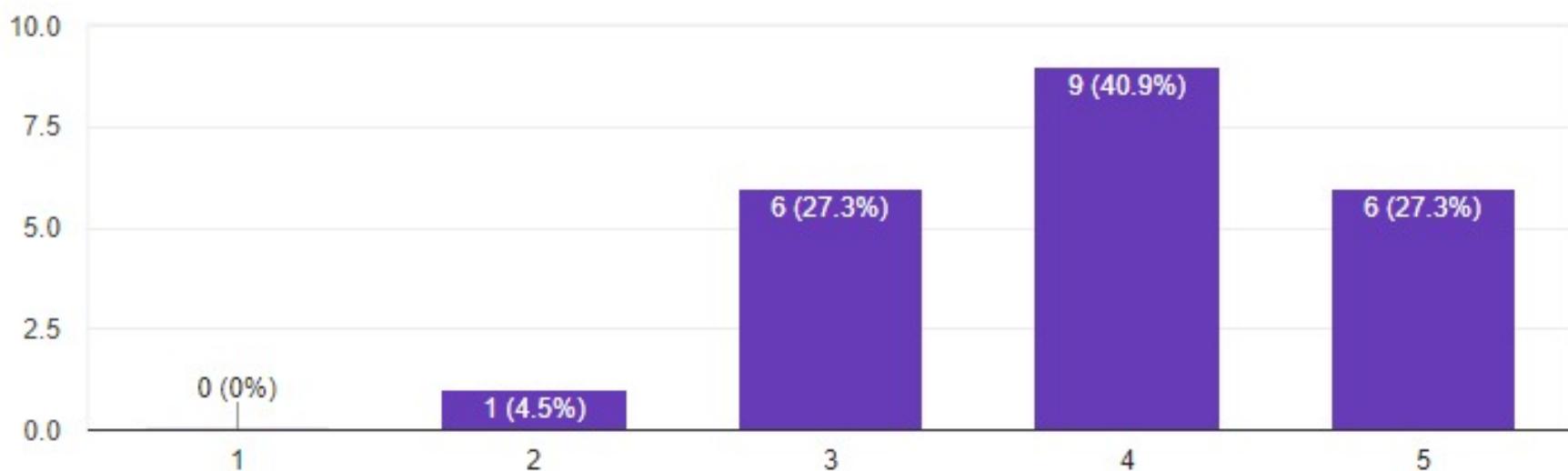
Self Sufficiency

- Now that we know the scale, the difficulty, and the stakes of the task, it is easy to see the importance of making people aware and self-sufficient.
- Cannot be completely reliant on others for information.
- People need to learn to think critically about a claim before accepting it as true. When they read something online, they need to ask themselves questions like: "Who is the publisher, and what are their biases?", and "Who will benefit if I believe in this claim?".

Self Sufficiency

Are you satisfied with the explanations and sources provided?

22 responses



- After taking the quiz, the users were asked to fill a survey form. One of the questions asked in that survey has been shown here.
- In response, people showed their trust in the explanations and sources provided at the end of the quiz.

Self Sufficiency

- We believe that people are willing to change their perceptions if they are provided with sufficient proof and logical explanation.
- Instead of trying to "solve" fake and false news through technology, it is more beneficial to put our efforts elsewhere. Like spreading awareness, and developing a critical mindset on people.
- Our role as technologists is not to say with an iron fist what is wrong and what is right, but to make it possible for the general public to listen to all sides of the story and make an informed decision.

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