

THE DATA GAZETTE



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Mar'21



CHIEF ADVISOR'S NOTE



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My heart brims with great joy and happiness seeing The Department of Statistics, Hindu College release its first issue of the e-newsletter entitled “THE DATA GAZETTE”. The newsletter is not only informative, but also of great educational value. Publishing a newsletter today is indeed a tedious and herculean task. In recent years, when students are more concerned about their academic excellence, they have to be coaxed, persuaded and encouraged to exhibit their writing talents. This newsletter provides a creative medium for students to express their opinions on a wide range of issues. To nurture future Statisticians, it is vital that they are exposed to a world outside academics and this newsletter is an attempt in the same direction. It is an initiative to make young minds think innovatively and sketch their ideas in words. I hope that reading this newsletter will encourage you to have an impact on others. We may never know how much our words or actions influence the lives of those around us, but we can regularly choose to be a positive life-changing influence. No matter if it's within the walls of where you work!

As the Chief Advisor of the editorial team and teacher-in-charge of The Department of Statistics, Hindu College, I heartily congratulate all those who have made efforts to bring out this newsletter. This edition adds a glorifying and colourful petal to a wonderful flower called THE DATA GAZETTE.”

**DR. MANOJ KUMAR
VARSHNEY**

EDITORS' NOTE

The Data Gazette, first e-newsletter from the Department of Statistics, Hindu College is a unique attempt to introduce students to varied practical issues of importance in the contemporary world.

This newsletter is not just intended for statisticians but instead caters to a much wider audience. It is our belief that statistics is not a separate field in itself, but a subject with practical applications in every domain. Concerted efforts have hence been taken to introduce how this subject in growing importance can be used by one and all in a diverse range of applications. Through this initiative, we have tried to focus on the holistic development of our readers.

The team that has arduously and ardently worked hard to make this magazine a reality hopes that inquisitive readers will enjoy reading the informative articles included in this first edition and upcoming editions of this newsletter.



RITHIK RAINA
EDITOR-IN-CHIEF



ADITHYA TARUN
EDITOR-IN-CHIEF



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Interview Questions

Profile
Strategy and Insights
Planning

Process
ZS conducted an aptitude test followed by 3
rounds of interviews

Position
Full-time
Job



Process Overview

The first step was an aptitude test after which only a few candidates got to the next round which was a case study round. This case had to be solved using a more quantitative approach as compared to the next case(1 hr). After this, there was a debriefing session with one of the HRs of ZS. In the debriefing session, there were guesstimates and mathematical riddles. The ones who cleared this round were given another case that had more of a qualitative approach. Then there was another debriefing session that worked on similar lines as the previous one. Then there was a final interview.

1st Case Study Round

I was given a case on product entry but the questions asked were more of quantitative nature. We had to use some percentage formulae, formulae related to sales, costing, etc. A question was asked to choose the best mode of advertisement based on some data they had given. Then there was a question to predict the net revenue of a decade based on the net revenue of the previous decade and the growth percentage of the company.

2nd Case Study Round

This round was based on the thinking skills and creativity of the person. The mathematics needed was restricted to some basic formulae of sales. We had to read charts and analyze data and devise a strategy for launching a new product in the market. I found this round to be relatively easy as there were no complex formulae involved. In the debriefing of this case, the interviewer gave me another case based on similar lines.

Fit Interview

Question :- You have good scores in grad so why not masters?

Behavioral ques:

1. Your colleague is not performing as well as you, which might lead to some problems in your project. What would you do in this case?
2. Have you ever had a conflict with your teammate if yes what did you do then?
3. As a leader did you solve any conflict in your team?

HOW IS DATA ANALYTICS CHANGING THE INDUSTRY GAME FOR ZARA?

ZARA is not just a brand; it is an emotion. It has become a mindset, a trend, a revolution, a lifestyle, and an impetus for the fashion industry.

Today, we see Zara making headlines, growing over 220% in annual revenue since 2004, more than its key competitors like H&M, GAP or the Banana Republic.

While all other companies roll out their designs on a seasonal basis, Zara uses 'fast fashion' to bring out the "trendiest trends" into the market as quickly as possible.

This is maneuvered by using data and analytics to track demands on a real-time and localized basis.

ZARA captures data through e-commerce sales, PDA (Personal Digital Assistant) devices, RFID tags, POS terminals, and customer surveys.

Mostly, Zara tags an RFID (Radio-frequency identification) microchip on its products before they leave a centralized warehouse. That piece of inventory is tracked until it is sold to a customer.

The data about sales in each SKU (Stock keeping unit), inventory levels in each store, and the speed at which a particular SKU moves from the shelf to the POS (Point of sale), is sent to Inditex's central data processing center on a real-time basis.

The sales tracking data is critical for Zara to acclimatize to the customer's demands. "A trend not bought or a trend not sought has no place to be in the lot!"

After collecting all the data, it is collated in their data center in Arteixo, Spain. The analysts process this data to initiate new design releases and adhere to the demand and supply chain. Zara generates data-driven predictions weekly, based on every single SKU that they sell.



Despite selling over 11,000 distinct items per year compared to just 2,000 to 4,000 of its competitors, it boasts the lowest year-end inventory levels in the fashion industry due to its smart optimization operations.

Thus, by leveraging artificial intelligence and data analytics, the big fashion retailer has mastered the art of appeasing customer's perceptions and channeling their demands to reality, just in the nick of time!

Shreshtha Gupta
Hindu College

Crypto

"If you don't believe it or don't get it,
I don't have the time to try to convince you, sorry."

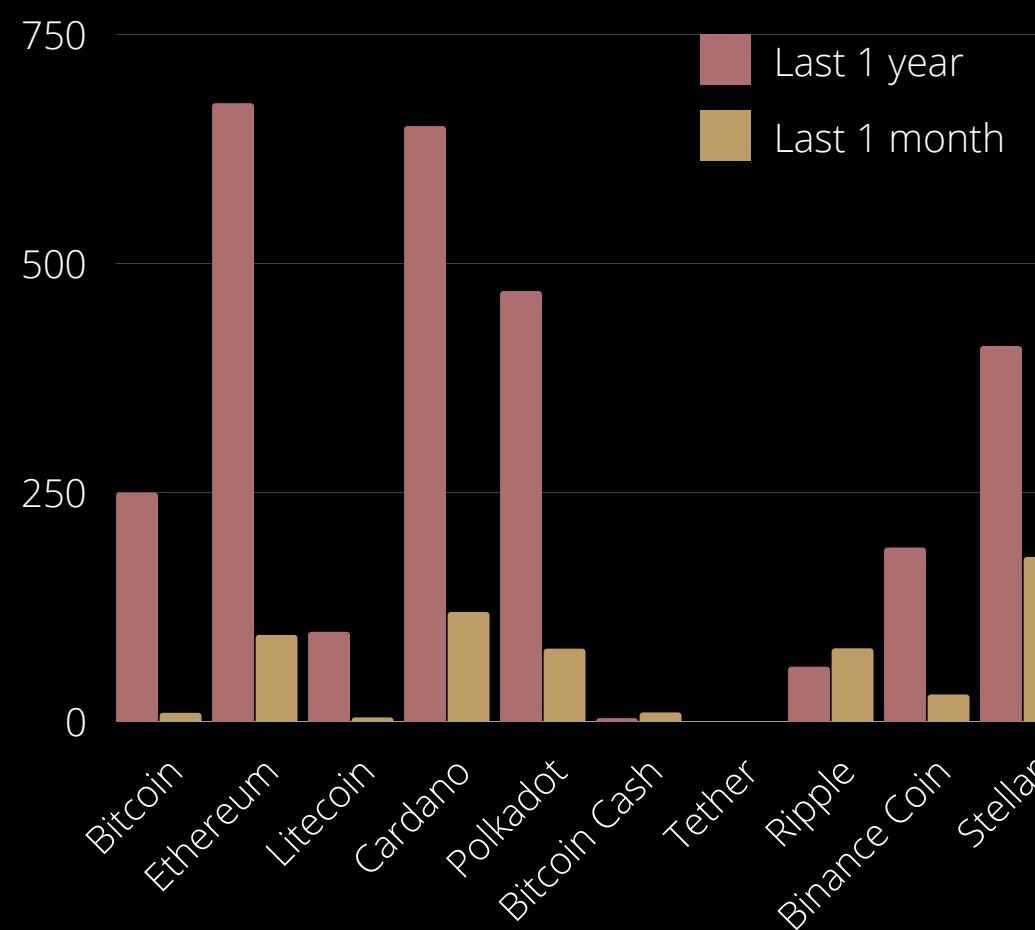
Satoshi Nakamoto,
Developer of Bitcoin & Dad of Cryptocurrencies

Bitcoin, the first of its kind was released nearly a decade ago. It was the time when digitalized materials were just sprouting. It was an innovative thing and hence many folds of setbacks were waiting for it. But once it gained its popularity, it never had any major setbacks. Ethereum, Litecoin, Cardano, Polkadot, Ripple, Stellar, Dogecoin are the other major cryptocurrencies that emerged after Bitcoin. But they gained their popularity much faster than Bitcoin, because of the trends that Bitcoin had made in history.

Cryptocurrencies like Bitcoin, Binance, Litecoin, Cardano and some others are limited. If they are exhausted, then it's done. Satoshi created bitcoin in such an algorithm that it will come to an end after mining 21 million coins, which is expected to occur by the year 2140. The limited supply and of course its volatile nature makes such cryptocurrencies more valuable. That's why the price of bitcoin shot up to 33,000 USD in January 2021.

Considering just the last decade, the bitcoin price itself grew to 551,857% which reflects the entire market of cryptocurrencies.

The cryptocurrency market now holds a market capacity of 624.35 Billion USD which is expected to be 3 Trillion USD by 2025 which can lead to the market of digital money.



Regarding its use in nations, especially in nations like India, the government is all set to ban cryptos. The Cryptocurrency and Regulation of Official Digital Currency Bill 2021 is under the consideration of parliament, which imposes restrictions on private cryptocurrencies like Bitcoin. But the government is trying to make use of the same technology to bring an official digital currency concept that will be under the control of RBI and SEBI. Even though the new bill creates hope among the citizens, it also creates havoc to a greater extent on the crypto traders.

Prices in trade markets are ruled by sentiment and this is even more true for any asset like cryptocurrency. Tesla recently revealed that it had bought \$1.5 billion worth of Bitcoin and that the company is planning on soon accepting the cryptocurrency as a form of payment. Soon after this, Bitcoin had crossed its price of \$48,000. The price of bitcoin on 21 February jumped above \$50,000 for the first time, bringing its year-to-date gain to 74%.

Whatever may happen, the global market of crypto is going to increase because the next generation of exchange is via these cryptos. The ban and restrictions will become a cover for the inventions of advanced blockchain technologies. The world around us is growing and the strength of blockchain is gaining its power, which will eventually open to a new era of possibilities.

Rise in Digitalisation

-Sarbojit Das, Hindu College



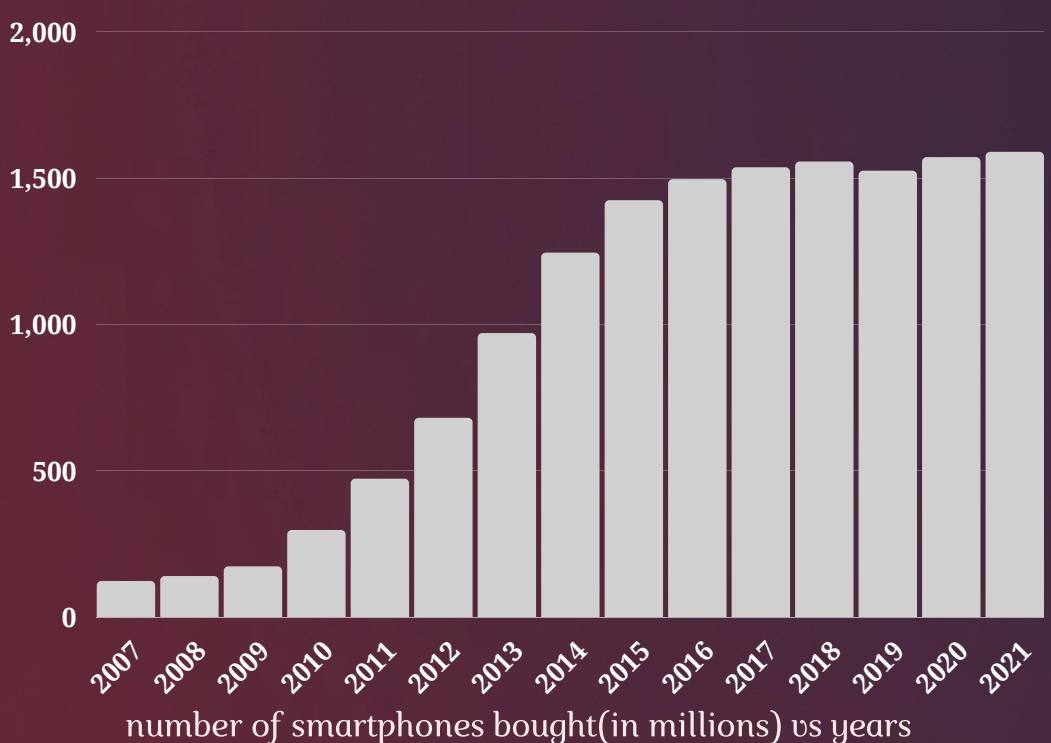
Digitalisation

The magic of digitalisation too, like any other, comes with a curse. With all of the applications fitted inside a single device, people have become slaves to the virtual world rather than embracing the real world. And while, we may have succeeded in building a new life beyond the screen, we often forget that not everyone in a developing country like India has access to smartphones, computers, internet connections or even infrastructure to support any form of digitalisation. In a country which struggles for basic necessities like food and water, computer literacy hardly makes it to the list, thereby making it difficult for the people to keep up with the rapidly changing digitalisation - which has become more of a necessity than a convenience.

Our ever changing world has day in, day out sparked digitalization at a breakneck pace. Inventions like these have led to the birth of a completely virtual era, the Digital World.

Digitization has created a massive impact on our lives- from buying groceries or paying our electricity bills, one no longer has to spend the better part of one's mornings waiting in queues to pay electricity bills or to make a withdrawal at the bank. All one needs is access to a fairly decent internet connection, and voila! – the task is done.

What attracts people to this digital world is its convenience and simplicity that enchants even the technologically challenged people.



All tasks can be accomplished online, be it booking a movie ticket or talking to anyone sitting in the USA. You no longer need to rely on cumbersome maps or the people on the road, while planning a road trip. Expensive international phone calls are now available at free of cost, courtesy of applications like SKYPE and WHATSAPP.

A student sitting in a remote corner of India, can benefit from the online courses offered by the leading universities of the country. Not only this, the wealth of knowledge captured in the libraries is now at the disposal of every cell phone user in any corner of the world. You name it – you have it!

However, despite all the negatives, the positives brought about by digitalisation cannot be ignored. There isn't any aspect that has been left untouched by the digital applications.

The digital world that we are now living in, is a step closer to an advanced and evolved world.

The Session unfolded with our honorable speaker, Mr. Sunil Prakash Bharadwaj, addressing the teachers and students as he reminisced his golden college days. Being a former Hinduite, he evinced gratitude towards the teachers who continue to endeavour in the institution.



- ISS Officer (Joint Secretary Level)
- Currently posted as Chief General Manager (Administration & Human Resources) in NHAI

His Experiences

Mr. Bhardwaj quoted his early experiences from the time when he had just joined the service in 1998, when it was still a small community. He threw light on the history and outset of ISS and how it grew into a large organization, owing to the rigorous efforts of its members. Finally, he was given one of the Flagship Teams to work under. Throughout the session, he emphasized that every profession depends upon the intensity of passion and enthusiasm that one puts in, to devote oneself to the job and deliver great results. Realizing one's own potential and being vocal about it to the superiors and the world at large is quintessentially important!

ISS at a Glance

- They are the agents of 'Quality and Reliable' data.
- Immediately after joining, Officers undergo 2 years of training in different fields at various institutes like Indian Institute of population sciences, Reserve bank of India Training college and many more.
- This is followed by a 3.5 months foundation course where you are made to participate in real life activities of other groups like railways, customs etc. to get practical knowledge.
- Eventually, you are posted as a Junior Time Scale officer/assistant director where you get a salary of level 10 as per Pay Matrix.

Busting the Myths

- Elite clubs/facilities are accessible only after putting in certain years in service; not readily at the entry level.
- Similarly, big cars, big houses or too much power isn't merely given after joining. Cars are given at the director level!
- Even though the salary at entry level is like half of the private sector, the ratio of the amount of work put in to what you get back is higher.
- Good vocabulary, expression and interpersonal communication are equally important as the knowledge of the subject. Being able to draft notes/letters/file is a pre and post requisite everywhere.

Pros & Cons of joining ISS

Pros:

- The moment one gets admitted to Central group A of the organization, he/she is labeled as a gazetted officer.
- The individuals get access to all the govt. facilities like accommodation, get to be a member of the elite clubs (after pouring in a rigorous effort, of course)
- While Job security is guaranteed in govt jobs, private jobs are full of uncertainty.

Cons:

- Unlike IAS or IPS, ISS officers are not allotted to any state hence lesser power, stature and facilities.
- The job is back end, burdensome and cumbersome hence not much in the limelight to be considered as a high-profile job.
- Promotions are very slow and lots of transfers are there as compared to other posts. People remain stagnant in the same position for 10-12 years.

BOOKS:

1st Aspect: Statistical Knowledge

- Fundamentals of Mathematical Statistics by Gupta Kapoor
- Fundamentals of Applied Statistics by Gupta Kapoor
- Probability and Introduction to Statistical Methods by VK Rohtagi

2nd Aspect: General Knowledge

It is important to stay updated with the current affairs through newspapers and magazines.

3rd Aspect: Command over Language

Ensure that you have a strong command on the language you speak because how to articulate the knowledge that you possess is equally essential.

STRATEGIES:

He encouraged selective studying and being thorough with all the theorems, deductions and results that the selective topic covers. He highlighted the importance of consulting teachers and preparing the right notes. One should start the preparation of the exam, according to one's study pattern and time schedule. Generally, 7-8 months before the exam is a good time to head start.

CRACKING THE INTERVIEWS:

The Interview being the last part is also the trickiest part and Mr. Sunil suggested that one should face it confidently. His advice was to be thorough with the statistical knowledge and current events.

The interviews are usually conducted by the subject experts hence it is always advisable to be as honest and admit if in case one gets stuck during the interview round. Being upfront and acknowledging about not knowing the answer to a question rather than bluffing and getting caught in the process is what he believed to be the right approach.

Backup options: The corporate sector is now blooming with so many job opportunities for the roles of data analyst, data scientists, actuarial sciences. With enough qualifications, one can also enter into a teaching profession. Firms like RBI and those under Agricultural departments also conduct exams to hire statistics graduates.

Q/A Session:

Difference between ISS & IES

<i>ISS</i>	<i>IES</i>
They are the data providers whose primary job is to collect, compile & provide ' Reliable & Quality Data '.	They are more into the analysis, interpretation of data provided by ISS.

Scope of Studying after joining the Service

Learners who want to pursue higher studies (Ph.D.) after getting into ISS can do so after serving in the organization for certain years. There are certain procedures that need to be followed and it requires certain permissions to be granted by the corporate authorities.

Can a candidate prepare for both ISS and Corporate Sectors simultaneously?

It's generally not wise to prepare for both ISS and corporate jobs but if one is passionate enough and has the ability to juggle between the two then one can go for this option.

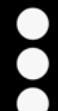
The session was enriching and exhaustive as the honorable speaker tried to incorporate every possible aspect of ISS and deliver a satisfactory answer to all the queries that were presented before him. Episode 1 of the M.I.N.D Series concluded with a Vote of Thanks to Mr. Bhardwaj.

Scan the QR Code to watch the complete video on our YouTube Channel



**Department of Statistics
Hindu College**
Statistics is the practice of...
youtube.com





Today

What is Data Privacy?

“Privacy” and “security” go hand-in-hand. With respect to data, data privacy is proper usage, retention, deletion and storage of data. Whereas, data security includes the policies, methods, and means to secure personal data through encryption, network security etc.

What was the WhatsApp policy changes controversy?

Answering your questions about WhatsApp's Privacy Policy

We recently updated our Privacy Policy and we have received many thoughtful questions. With some of the rumors going around, we want to answer some of the common questions we have received. We go to great lengths to build WhatsApp in a way that helps

With end-to-end encryption, we cannot see your private chats or calls and neither can Facebook. We're committed to this technology and committed to defending it globally. You can read more here: [whatsapp.com/security/](https://www.whatsapp.com/security/)

3:15 am · 09 Jan 21 · Twitter Web App

663 Retweets 307 Quote Tweets 2,394 Likes

+ 4

Few days back, WhatsApp displayed the following four messages in their status,

- “We are committed to your privacy.”
- “WhatsApp can't see your shared location.”
- “WhatsApp cannot read or listen to your personal conversations as they are end-to-end encrypted.”
- “WhatsApp doesn't share your contacts with Facebook.”

WhatsApp, then had to clarify their policy changes. It discussed the privacy in two broader categories, the “business messages” and “messaging with your family or friends”. The difference between them is that the new privacy policy pertains to the former alone and the latter remains unchanged.

Is Data Privacy a Myth?

Welcome to one of the most conventional topic on data! Data privacy is nothing but an illusion. Moreover, there is no part of the Indian legislature mentioning about the data privacy in specific. It does nothing to ensure the security of data of the individuals online. Your data lying in the databases of the large corporations can be completely accessible to anyone with the right tools on the internet, despite their claim of heavy security and protection of data by privacy policies. But that is all there is, a claim! You search for something in a search engine, and moments later, you see an advertisement for it on your social media account, often directing you to something that is close but not what you searched for.

On analysing carefully, it can be observed that threats to data privacy are growing exponentially. The data can be protected only and only when the user only can have eyes over the data. Otherwise, it may be difficult to secure data shared.



BIOINFORMATICS

The DNA Patrol

In a layman's language, Bioinformatics is the art of teaching the computer to process biological data, to see and foresee what humans cannot. This can be achieved by development of new algorithms and statistical measures that can assess relationships among members of these large data sets.

End-to-End

MUDIT KUMAR
HINDU COLLEGE



Would you believe that If all the DNA in your body is laid end-to-end, it would measure a staggering 200 billion kilometers! That's long enough to stretch from Earth to the Sun 1,333 times! This humongous amount of data potential has been exploited by researchers to store as much as 700 terabytes of data in a single gram of DNA. According to computational biologist Nick Goldman, all of the information in the entire world (videos, photos, scientific papers, the Internet) can fit in the back of a single van! Only if it is scaled properly using the read-write DNA technology soon or sooner.

The Future

The future of bioinformatics favours mankind. Integration of a wide variety of clinical and genomic data will allow us to tackle diseases like infertility, breast cancer or Alzheimer's disease. The integration of GIS(Geographic Information System) data, such as maps, weather systems, with crop health and genotype data, will allow us to predict successful outcomes of agricultural breeding experiments to target issues like food insecurity. But what is keeping us away from accomplishing these much required advancements?

Identity Cards

DNA Fingerprinting is the process of determining these 'identity cards' or an individual's DNA characteristics by data analysis. Such a magical tool has been made possible because of the amalgamation of Biology, Information Technology and Statistics. Subsequently, a new discipline called Bioinformatics was developed. It has now become possible to keep a track of the enormous genetic data by the use of highly advanced devices for data storage and retrieval, and statistical techniques

Biggest Hurdle

One of the biggest hurdles facing Bioinformatics today, is the small number of researchers in the field. The ongoing Covid - 19 global pandemic could have been addressed with much more zeal if Bioinformatics was widespread.

Sugar Coated or Stats Quoted?

—“There are lies, damned lies and Statistics”

Rishika K.
Hindu College

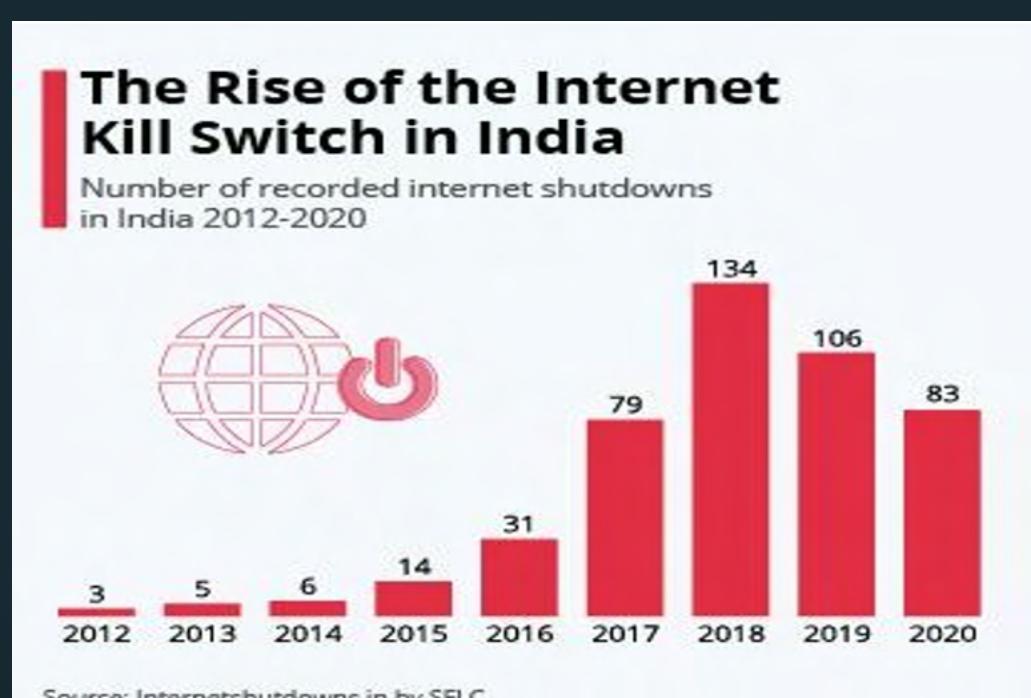
Two newspaper articles were headlined as follows:

- “India is the Internet Shutdown Capital of the World”.
- “More than 400 internet lockdowns in the last 4 years in India; average cost of each ₹2 crores/hour”.

Which amongst these headlines struck you the hardest?

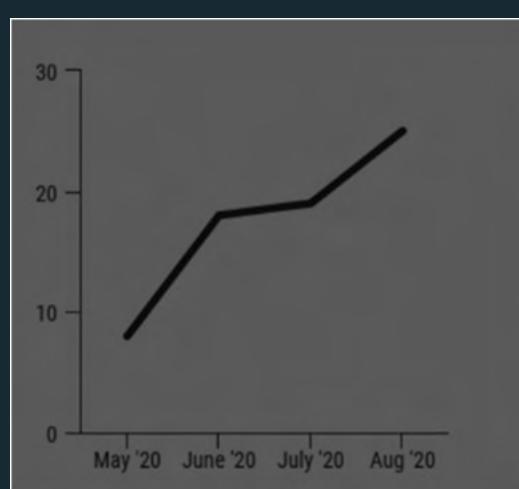
With globalization, we try to monitor every subject happening around us just by going through the headlines without diving into the depths of the whole article. Thus, a headline which is backed by some statistical figures, mostly averages, is considered self-sufficient to grasp the attention of the readers.

Therefore, manipulation of averages by being biased in sample selection viz. by including or ignoring the outliers in the dataset can be a wise way to favor one's concerns. For instance, let us suppose the government makes a statement that India has observed a decline in the number of internet lockdowns since 2018.

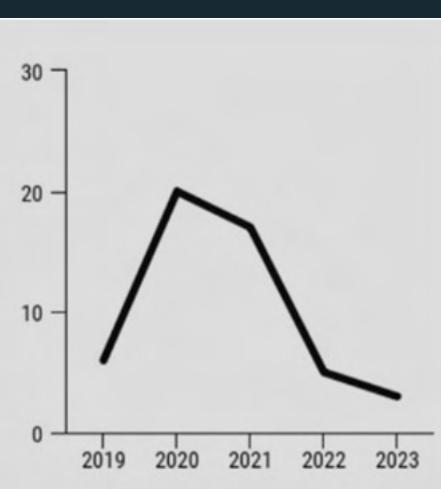


As data literacy isn't common, percentage averages can be another way out to befuddle people as they treat the results of a 1000-person trial just as they would a 10-person trial.

Furthermore, Cherry Picking and Data Visualization technique come into play to ostensibly leave the target mass perplexed. For instance, if any company had an overall downward trend in the sales of its production (graph 2) but observed an upward trend during some months of the year (graph 1), it can intentionally present only graph 1 to reflect its stature in the market.



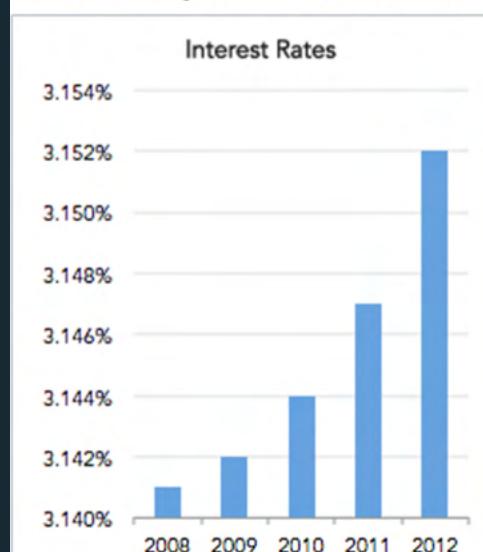
Graph-1



Graph-2

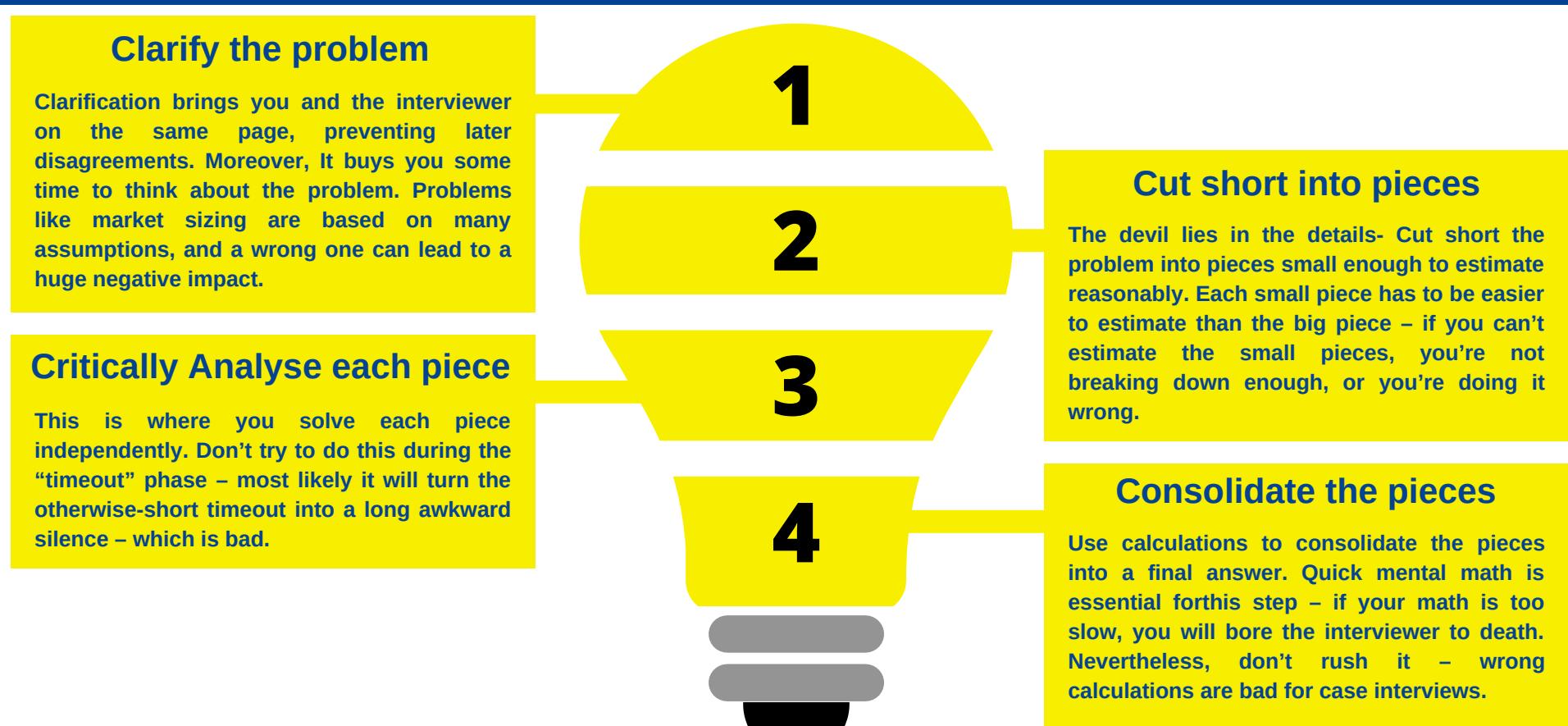
On a similar note, let us observe the graphs below:

Same Data, Different Y-Axis



What do we infer from these graphs? Was there a vast difference in the interest rates each year? Or were they similar? That's right! Truncating Y-axis and adjusting the scales on it, is one of the tactics which could do a great job in producing surprising trends where none exists. Knowing when to use statistics as a source of white lies can open doors that weren't there before! Hence, it is safe to say that a tiny match of statistics we've been fooling with might just set off an explosion.

Solving Guesstimates- The 4 C's Approach



<u>DO'S</u>	<u>DONT'S</u>	<u>EXAMPLE</u>	<u>RESULT</u>
Make <u>close-ended clarifications</u> as they limit the possibilities to only the ones favorable to you.	On the other hand, open-ended questions <u>take away your control</u> and give it to the interviewer, making the question much less predictable.	"I can't help but notice some unclear terms in the question, so I'll clarify it. (Clarifications) So, aren't we on the same page on this?"	With this method of clarification, the interviewer is directed towards saying "yes", as the wordings hide away the "no" option.
Make <u>defendable estimations</u> . So it is always advised to take buy-in from the interviewer while assuming any number but be prepared to defend your assumptions with logic and rationale.	Avoid generating data from thin air based on your hunch. If you are not sure about a number, <u>just ask for it</u> .	"This (estimation) is based on the fact that (logic)."	With proper logic, the chances are high that the interviewer gets convinced as his aim is to evaluate the candidate's reasoning acumen.
Do your brain a favor, and <u>round the numbers</u> for easier calculations. Ideally, you would alternate between rounding up and rounding down, so the offsets will cancel each other out and <u>minimize your margin of error</u> .	Don't round off much if there's a high multiplication factor as it will lead to huge inaccuracies. Avoid taking figures out of your <u>assumed range</u> .	"80% instead of 81.25%; 60 million instead of 61 million."	Well-rounded numbers are easy to work with for further calculations.
Talk through your steps of assumptions and calculations and make it an <u>engaging dialogue</u> .	Avoid awkward silences as the interviewer might lose interest.	"It's interesting to note that", "I would like to justify."	The interview becomes lively and the interviewer is convinced of your communication skills.
Draw visual aids such as flow charts and tables as they ensure a focused track amidst a network of data and estimations.	Without visual aids, you'll appear less organized – not good in a case interview.	"I have adopted a structured approach towards this problem, from the surface to its fundamental aspect."	The interviewer is convinced about your ability to tackle a problem considering all its aspects.



Give it a try:
Guess how many people are using excel in Delhi?

Answers to be submitted at hindustatistics@gmail.com

(Best Approach will win a certificate)

-Mudit Kumar | Sakshi Bajaj

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