

**Lecture 11**

**DD 324:**  
**Data Visualisation**

**Odds and endings**

**Lecture 10**

**DD 324:**  
**Data Visualisation**

**Interactivity & Motion**

**Lecture 9**

**DD 324:**  
**Data Visualisation**

**Schematic Maps**

**Lecture 8**

**DD 324:**  
**Data Visualisation**

**Dashboards**

**Lecture 7**

**DD 324:**  
**Data Visualisation**

**Colors and Cartography**

**Lecture 6**

**DD 324:**  
**Data Visualisation**

**Data is Around Us**

**Lecture 5**

**DD 324:**  
**Data Visualisation**

**Convincing with Data**

**Lecture 4**

**DD 324:**  
**Data Visualisation**

**Human Visual Perception**

**Lecture 3b**

**DD 324:**  
**Data Visualisation**

**Images as Data**

**Lecture 3**

**DD 324:**  
**Data Visualisation**

**Ways to visualise**

Lecture 2

**DD 324:**  
**Data Visualisation**

Why ————— visualise?

**Lecture 1**

**DD 324:**  
**Data Visualisation**

**An intro to Data Visualisation**

# An intro to Data Visualisation

Data Visualisation · Gyan Lakhwani · January 2025



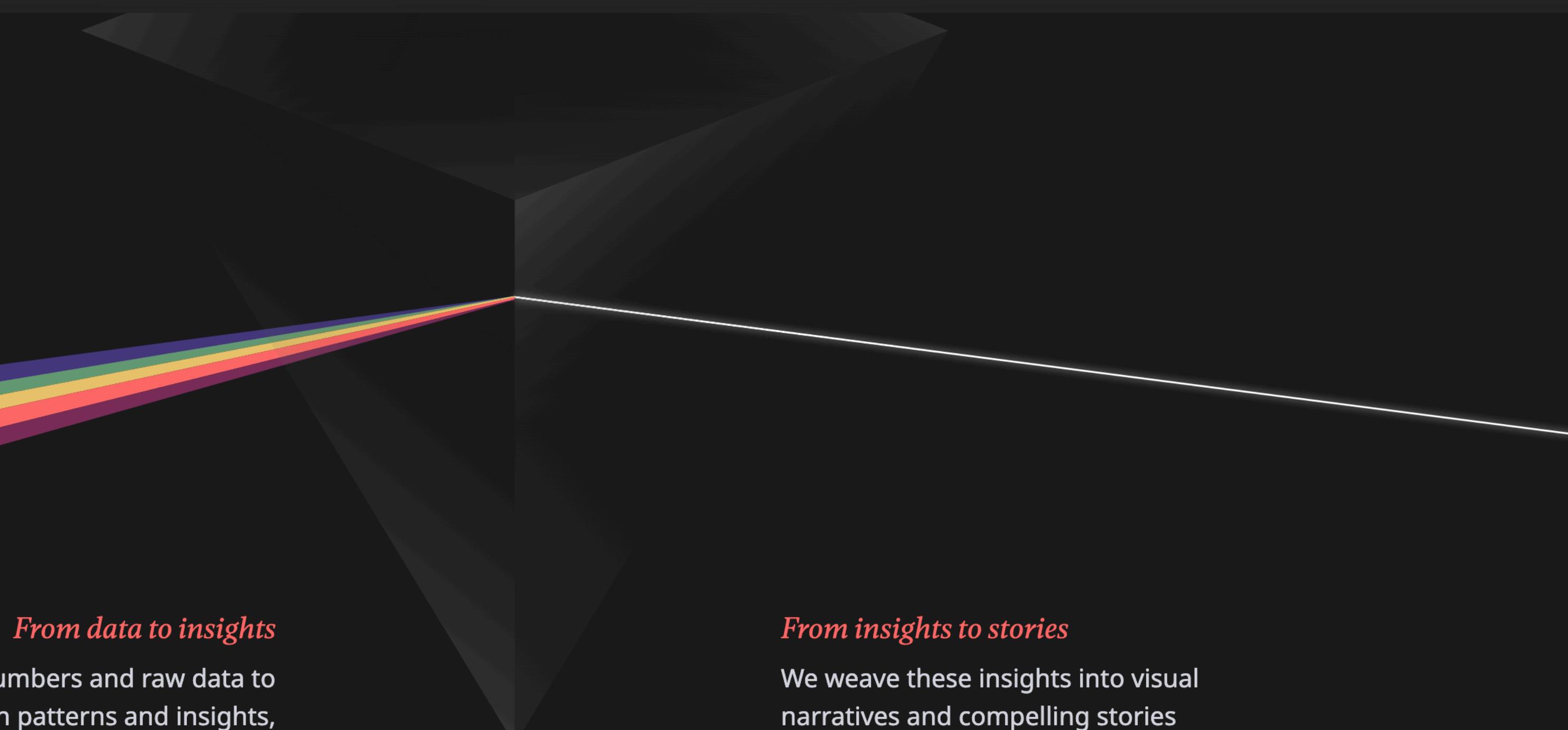
# VizChitra - WhatsApp Community + Conference in Bangalore



# Revisual Labs



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## *From data to insights*

We crunch numbers and raw data to unearth hidden patterns and insights, simplifying complex information.

## *From insights to stories*

We weave these insights into visual narratives and compelling stories that delight audiences.

*We've simplified data for ↗*

World Association  
of News Publishers



THE ECONOMIC TIMES



UNEARTHED



Dalberg

# Literacy

# Literacy

## Graphicacy?

# Graphicacy

*the ability to understand and present  
information in the form of sketches,  
photographs, diagrams, maps, plans, charts,  
graphs and other non-textual formats.*

Here's an analogy to convey the statistics and help you grasp the role of outliers: Imagine you're in a bar enjoying a beer. Eight other people are drinking and chatting. None of you has killed anyone in your life. Then, a tenth person comes in, a hitman for the Mob who's dispatched 50 rivals in his career. Suddenly, the average kill count per drinker in the bar jumps to 5! But of course that doesn't automatically make you an assassin.

# **Zipf's Law**

In a large body of text, the frequency of any word is inversely proportional to its rank in the frequency table.

If the most frequent word appears  $f$  times, then the second most frequent appears  $f/2$  times, the third appears  $f/3$  times, and so on.

## **In English:**

"the" might appear 10,000 times,

"of" appears  $\sim 5,000$  times,

"and" appears  $\sim 3,333$  times, etc.

# **Benford's Law**

In many naturally occurring datasets (e.g. population sizes, financial transactions), the leading digit is more likely to be small.

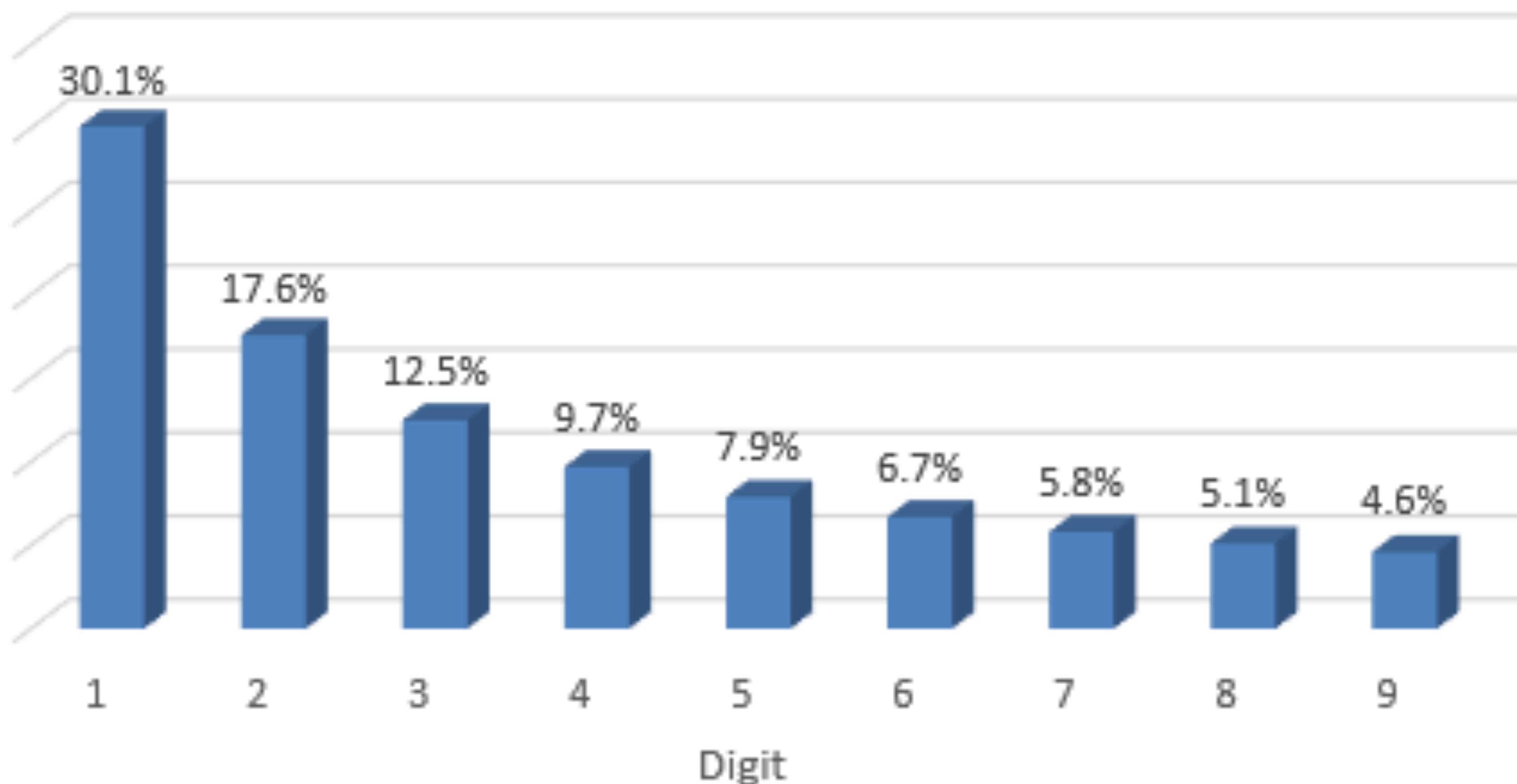
Specifically, 1 appears as the leading digit  $\sim 30\%$  of the time, while 9 appears  $<5\%$  of the time.

## **USES**

**Accounting fraud detection** (fake numbers often don't follow this distribution)

**Detecting anomalies** in scientific data, election results, etc.

## Benford's Law for Leading Digits



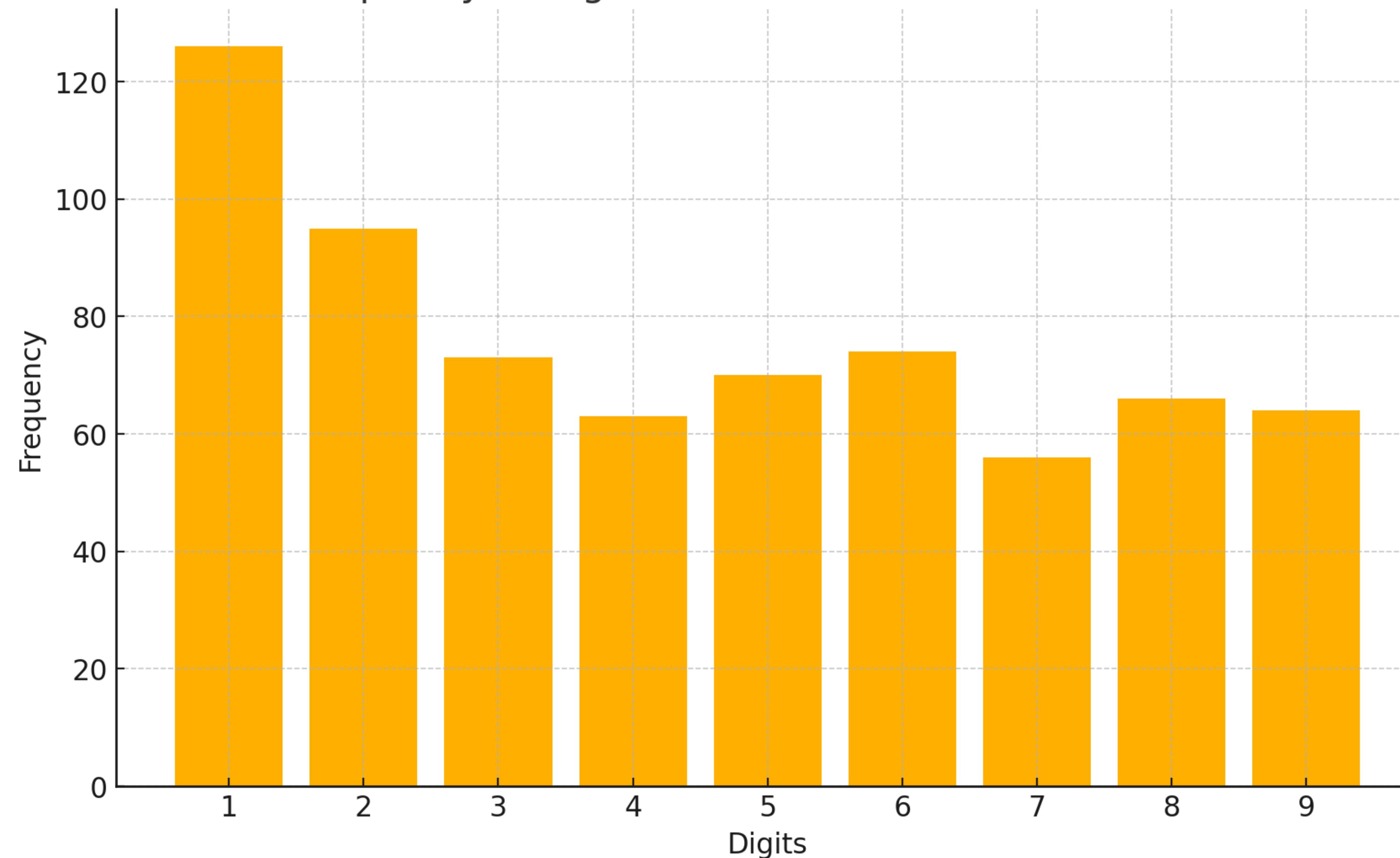
Data ————— Information

# Card PINs

3.5 million PINs that were hacked from a bank.



## Frequency of Digits 1 to 9 in the First 200 Numbers

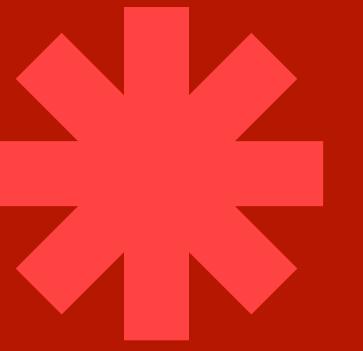




# When statistics become stories

*Gurman Bhatia*

[https://gurmanbhatia.com/talk/  
2019/11/17/statistics-stories](https://gurmanbhatia.com/talk/2019/11/17/statistics-stories)



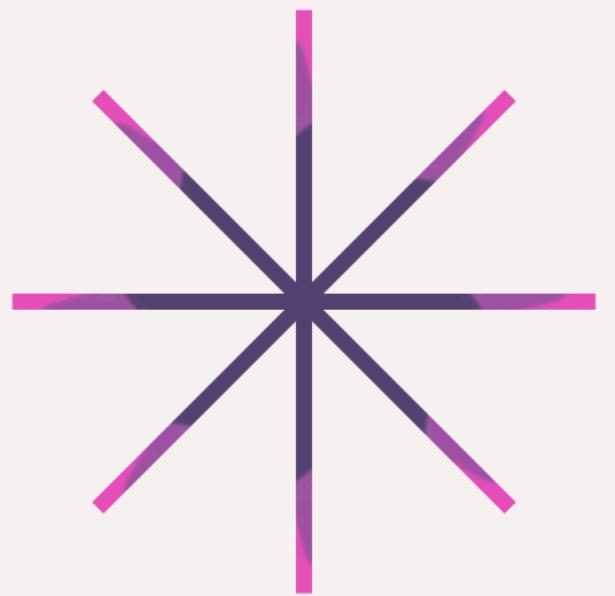
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