

A213 Creating Infographics- Soojin Kim

DATA VISUALIZATION

INFOGRAPHIC(or Information Graphic)

information in a visual format or graphical elements

Information: Knowledge in the form of words, numbers, or concepts

Data: Quantitative(or Quantifiable or mostly numeric) Information

Data Set: Collection of Data

Design: The concept, functionality, and graphic output(Solution or Practice) intended to solve a specific problem

Visualization: Process of making visual to communicate specific knowledge

Illustration: Depiction of an object

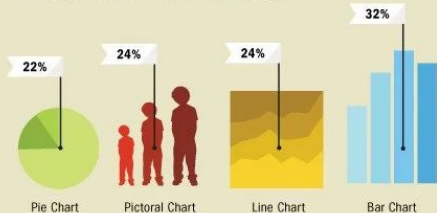
INFOGRAPHIC OF INFOGRAPHICS

Data visualization is a popular new way of sharing research. Here is a look at some of the visual devices, informational elements, and general trends found in the modern day infographic.

DESIGN

CHART STYLE

Percentage of infographics with the following charts:



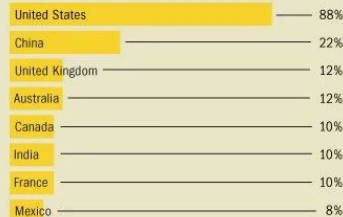
FONT

■ Sans Serif
 Condensed Sans Serif
 ■ Serif



CONTENT

COUNTRIES FEATURED



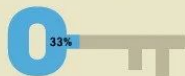
THEME

Relative popularity of different infographic themes:



KEY INFO

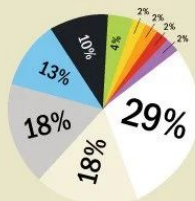
Percentage of infographics with key:



Average number of symbols per key: 5.1

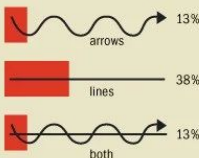


BASE COLOR

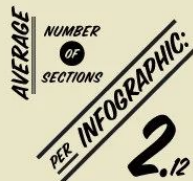


NAVIGATIONAL ICONOGRAPHY

Frequency of arrows & connecting lines in infographics:



SECTIONS



CREDITED SOURCES

Average number of sources per infographic: 2.29



TITLE

Average number of words per infographic title: 4.36

"RICHEST AND POOREST AMERICAN NEIGH"

TYPES OF CHART

COMMON FORMS OF DATA ANALYSIS

COMPARISON OF DATA

For identifying the highs and lows of data. Who is the best and worst sales guy among 10 individuals?



COLUMN CHART



BAR CHART



LINE CHART



AREA CHART

COMPOSITION OF DATA

To understand how a data value breaks down into its constituents. How does the website traffic break down into search, direct, referrals and campaigns?

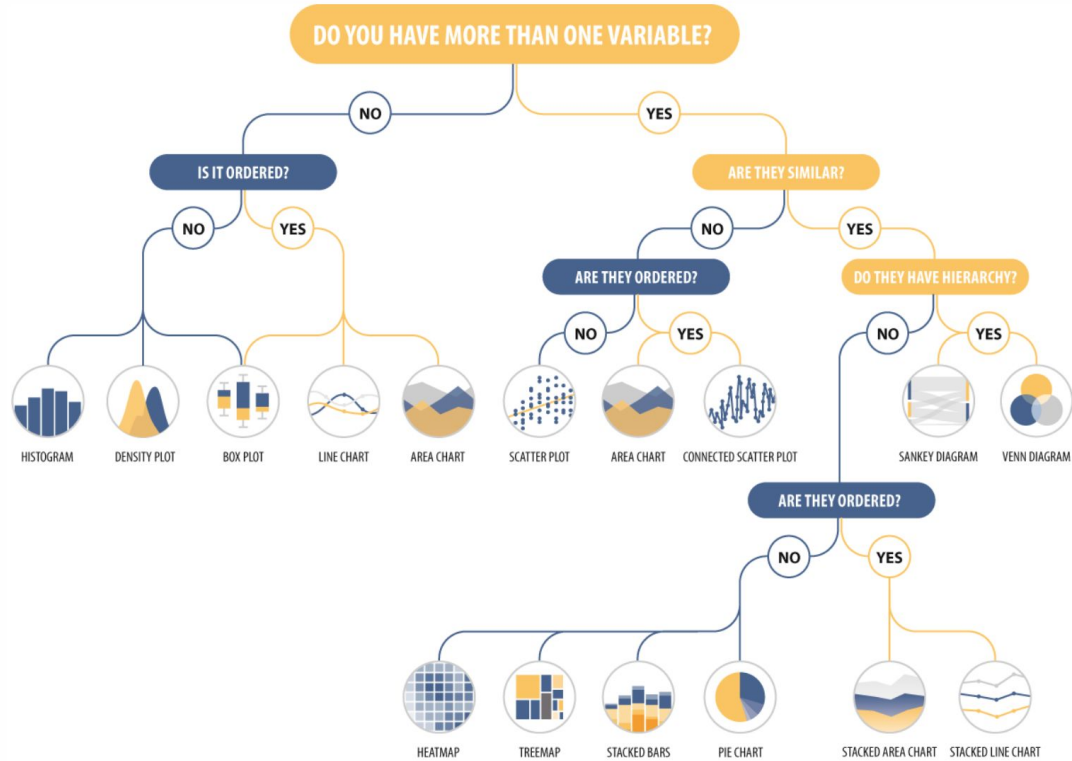


PIE CHART



WATERFALL CHART

HOW TO CHOOSE A RIGHT CHART? (This might be helpful)



ADDITIONAL RESOURCE

<https://datavizproject.com/>

PROJECT 1 - DATA TO DYNAMIC INFOGRAPHICS

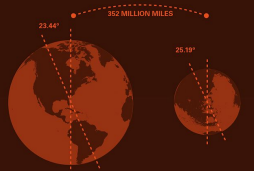
Overview & Specifications

You will choose one article from the Nature magazine. Visit <https://www.nature.com/nature/research> or visit the library for actual magazine.

Choose an article with quantitative data. Consider the importance of data in the current environment, social, political context. Visualize your tabled data into infographic charts and execute infographics including title, supplementary text, and the source of data.

MARS ROVER CURIOSITY

MARS SCIENCE LABORATORY MISSION
PART OF NASA'S MARS EXPLORATION PROGRAM
ALONG-TERM EFFORT OF ROBOTIC EXPLORATION OF MARS
MARS SCIENCE LABORATORY WILL STUDY MARS' HABITABILITY



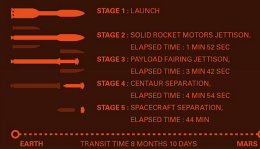
EARTH	MARS
DAY 24 HOURS	DAY 24 HOURS 40 MINS
NEAR 350 DAYS	YEAR 687 DAYS
SURFACE TEMPERATURE 57°F (14°C)	SURFACE TEMPERATURE -81°F (-63°C)
GRAVITY 2.66 TIMES THAT OF MARS	GRAVITY 0.376 THAT OF EARTH

LAUNCH VEHICLE

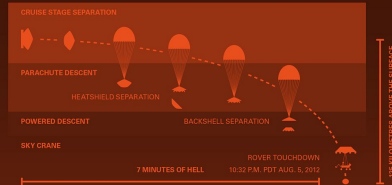
ATLAS V-541
HEIGHT WITH PAY LOAD
311 FEET (95 METERS)
WEIGHT
531,000 KG
LIFTOFF
1002 A.M. EST
NOVEMBER 26 2011
CAPE CANAVERAL
AIR FORCE STATION
FLORIDA

ATLAS V-541

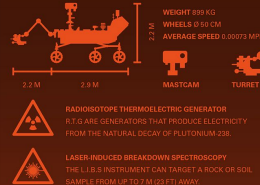
ATLAS V-541 LAUNCH AND SEPARATION



M.S.L. ENTRY, DESCENT, AND LANDING



MARS ROVER CURIOSITY



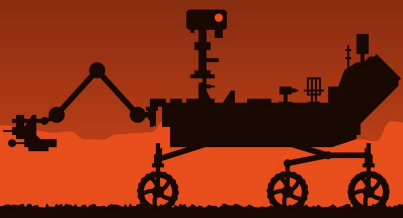
IN ORDER TO GET THE
MARS ROVER CURIOSITY
FROM EARTH TO MARS
TRAVEL 350 MILLION MILES
IN ONLY 253 DAYS TOOK

\$ 2.5 BILLION

250 SCIENTISTS

160 ENGINEERS

MARS ROVER
FLIGHT
DIRECTOR
ROCKING
A MOHAWK



Tracking trouble in the Arctic

Migrating shorebirds face a long list of hazards on their epic flights.

BY MARGARET MOURD
AND RICHARD MONASTERY
DESIGN BY JASIEK ARZYŁYŃSKI

Many shorebird populations are declining steeply around the globe, and those that nest in the Arctic are among the hardest hit. On their long-distance migrations, they encounter a number of threats, including hurricanes and hunters, pesticides in croplands and human sprawl that is destroying wetlands used by the birds as refueling stations. By tracking the journeys of each species, researchers can better understand the problems confronting these birds.

Shorebirds are vulnerable because their migrations are tightly tuned to the cycles of other species. The robin-sized red neck (*Calcarius canadus*, pictured) that breeds in the Canadian Arctic times its northward migration so that it can stop and bulk up on the eggs of horseshoe crabs (*Limulus polyphemus*) in Delaware Bay. Western sandpipers (*Calidris mauri*) touch down every spring on Canada's west coast to feast on biofilm produced by algae along the expansive mudflats of the Fraser River delta. And at the Arctic breeders aim to have their chicks hatch at a time when there is a banquet of mosquitoes and other insects on the tundra.

But there is growing concern—and evidence—that the connections have begun to fray because of climate change and other human impacts on the environment and ecosystems.



Spy tech

MOTION MONITORING

Pin-sized sensors (shown here on and on back of bird) that weigh as little as 0.02 grams are so light that they can be glued onto small birds, bats and insects. Before an egg is laid a couple of weeks in a year, covering coded transmitters that get cooked up in a nest of insects. Hardware left on when birds hatch.

SATELLITE TAG

Tags attached to backs of birds send or receive signals from satellite networks to track the location of the birds as they migrate. These tags are bigger than pin-sized sensors and generally are removed from the bird, or fall off.

GEOLocator

Long trailing tags, typically attached to the leg, hold antennas and sensors, which can be used to establish rough estimates of a bird's altitude and longitude. Tags may be attached to wettable darts.

Animal network

A powerful new tool in animal research is the Motus Wildlife Tracking System, which uses a network of towers that capture signals from satellites. The system has some 300 towers located mostly in North America, and is expanding to other continents.



Trials and trails

The red neck has a migration of about 50 kilometers, but it makes one of the longest annual migrations on earth. From the tip of South America to the Arctic. The red necks, which breed in northern Canada, has been found to nest in Alaska. It is thought that an introduction to the United States and endangered by Canada.

MAP KEY

- Male birds
- Active
- Inactive, temporarily
- or seasonal habitats
- Flight paths
- Estimated 2014-16
- Spring
- Autumn
- Threats
- Large-scale population range
- Norise River hydroelectric plants
- Existing
- Planned



SNOW GEESE
The introduction of some genes (Chen campbellensis) and other genes to the North American Arctic has increased from about 1.8 million to the Arctic to an army of 20 million. The birds are thought to be spreading to US farming that provides abundant food sources for the birds.

HORSESHOE CRAB NARROWS
Red necks time their migration path to match on eggs laid by horseshoe crabs in Delaware Bay. Overharvesting of the crabs is thought to have contributed to the steep decline of the birds.

HUNTING
Hunting is a threat to shorebirds, particularly in several Caribbean islands and northern South America. Efforts are currently under way to better estimate the annual harvest with an aim of preventing the loss of too many birds.

FEATURE NEWS

Population problems

STOLEN ARCTIC EGGS

Last year 7% of the shoveler eggs of East Bay on Southampton Island were found unaccountably, whereas the rate of Canadian Arctic was 10%. The difference? Canada's birds lay its eggs generally East Bay, a warmer, better protected area. But Canada's birds are not getting the opportunity for predators to steal eggs.

EAST BAY

20,776 eggs (nest)



GOATS ISLAND

24,744 eggs (nest)



NEGATIVE NUMBERS

Since the 1970s, migratory shorebird species have experienced a 70% rise in population loss, on average.



ONE MILLION DEATHS

WHAT RESEARCHERS ARE LEARNING FROM AN UNPRECEDENTED SURVEY OF MORTALITY IN INDIA.

BY ANJALA NIELSEN

In 1976, when Prashant Jha was growing up in Canada, his family received a report from India that his grandfather had died. The cause was unclear, like many people living in rural India, Jha's grandfather had died at home, without having visited a hospital. Jha's mother was desperate for more information, so she returned to her home village to talk to locals. Years later when she was at medical school, he received his mother's notes and realized that his grandfather had probably died of a stroke. Now Jha, an epidemiologist at the University of Toronto, is hearing the end of an ambitious public-health programme to document death in India using remote "verbal autopsy" strategies. The Million Death Study (MDS) involves household-in-person surveys of more than 12 million households across India. The study covers the period from 1997 to the end of 2013, and will document roughly 1 million deaths. Jha and his colleagues have coded about 450,000 so far, and have discovered several surprising trends that are starting to lead to policy changes, such as chronic smoking before tuberculosis. Public-health experts need mortality figures to monitor disease and assess interventions, but quality mortality data are scarce in most developing countries. Scarcity first per cent of the 60 million people who die each year around the globe are in low- and middle-income countries, such as India, where cause of death is often misclassified or unreported. Groups such as the World Health Organization (WHO) typically base mortality estimates on hospital data, but in many developing countries most people die outside hospitals.

As global health researchers increasingly turn to informal computer models, many applied the MDS's low-tech, on-the-ground approach and see it as a model for assessing local health burdens in the developing world. "For countries like India, there will almost certainly continue to be a role for verbal autopsy," said Colin Mathers, coordinator of mortality and burden of disease at the WHO. "It's a crucial source of information."

HOW THEY KILLED THE DATA

The Million Death Study (MDS) covers six periods, 1997-2001 and 2002-2013, each of which consisted of different clusters of more than a million homes.

800-900



BIRTHDAY BIRTHDAY

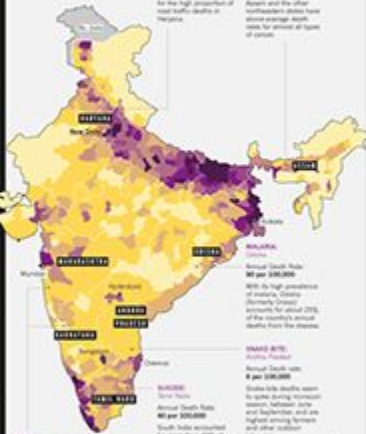
The project asks about vital events of death, a reference to geography, knowing which events are present in which states, identify patterns and future studies.

INDIA-INDIA: INDIA: INDIA

Annual Death Rate: 80 per 100,000
High fertility forcing couples may be to blame for the high percentage of road traffic deaths in villages.

CANCER

Annual Death Rate: 80 per 100,000
For reasons not yet clear, Asians and the other nonwhite populations have above average death rates for prostate all types of cancer.



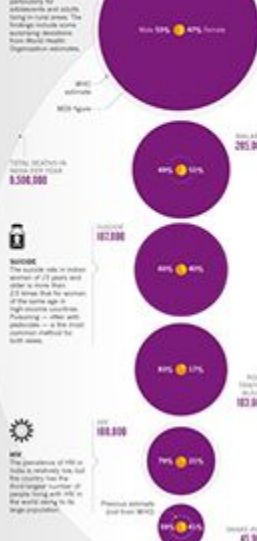
50,000-58,000 TWO



Global deaths from a total of 600 range a cover of death on the face of each individual.

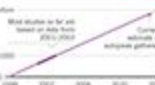
INDIA IN THE WORLD

Global deaths from a total of 600 range a cover of death on the face of each individual.



REACHING 1 MILLION

Using a model based on the 2011 national census, researchers predict that India will reach a million deaths by the year 2040.



THE MILLION DEATHS

Most deaths are occurring outside of the hospital setting and in rural areas where they are often not reported. The MDS is helping to expose the hidden toll.

CANCER

Most cancer deaths are occurring outside of the hospital setting and in rural areas where they are often not reported. The MDS is helping to expose the hidden toll.

ROAD TRAFFIC

Most road traffic deaths are occurring outside of the hospital setting and in rural areas where they are often not reported. The MDS is helping to expose the hidden toll.

HEART DISEASE

Most heart disease deaths are occurring outside of the hospital setting and in rural areas where they are often not reported. The MDS is helping to expose the hidden toll.

STROKE

Most stroke deaths are occurring outside of the hospital setting and in rural areas where they are often not reported. The MDS is helping to expose the hidden toll.

DIABETES

Most diabetes deaths are occurring outside of the hospital setting and in rural areas where they are often not reported. The MDS is helping to expose the hidden toll.

TUBERCULOSIS

Most tuberculosis deaths are occurring outside of the hospital setting and in rural areas where they are often not reported. The MDS is helping to expose the hidden toll.

ALL CAUSES

Most all-cause deaths are occurring outside of the hospital setting and in rural areas where they are often not reported. The MDS is helping to expose the hidden toll.

CHRONIC RESPIRATORY DISEASE

Most chronic respiratory disease deaths are occurring outside of the hospital setting and in rural areas where they are often not reported. The MDS is helping to expose the hidden toll.

LIVER DISEASE

Most liver disease deaths are occurring outside of the hospital setting and in rural areas where they are often not reported. The MDS is helping to expose the hidden toll.

SKIN DISEASE

Most skin disease deaths are occurring outside of the hospital setting and in rural areas where they are often not reported. The MDS is helping to expose the hidden toll.

LEUKEMIA

Most leukemia deaths are occurring outside of the hospital setting and in rural areas where they are often not reported. The MDS is helping to expose the hidden toll.

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FEATURE NEWS