Class 6: Bar Charts In Processing, Guest Lecture.
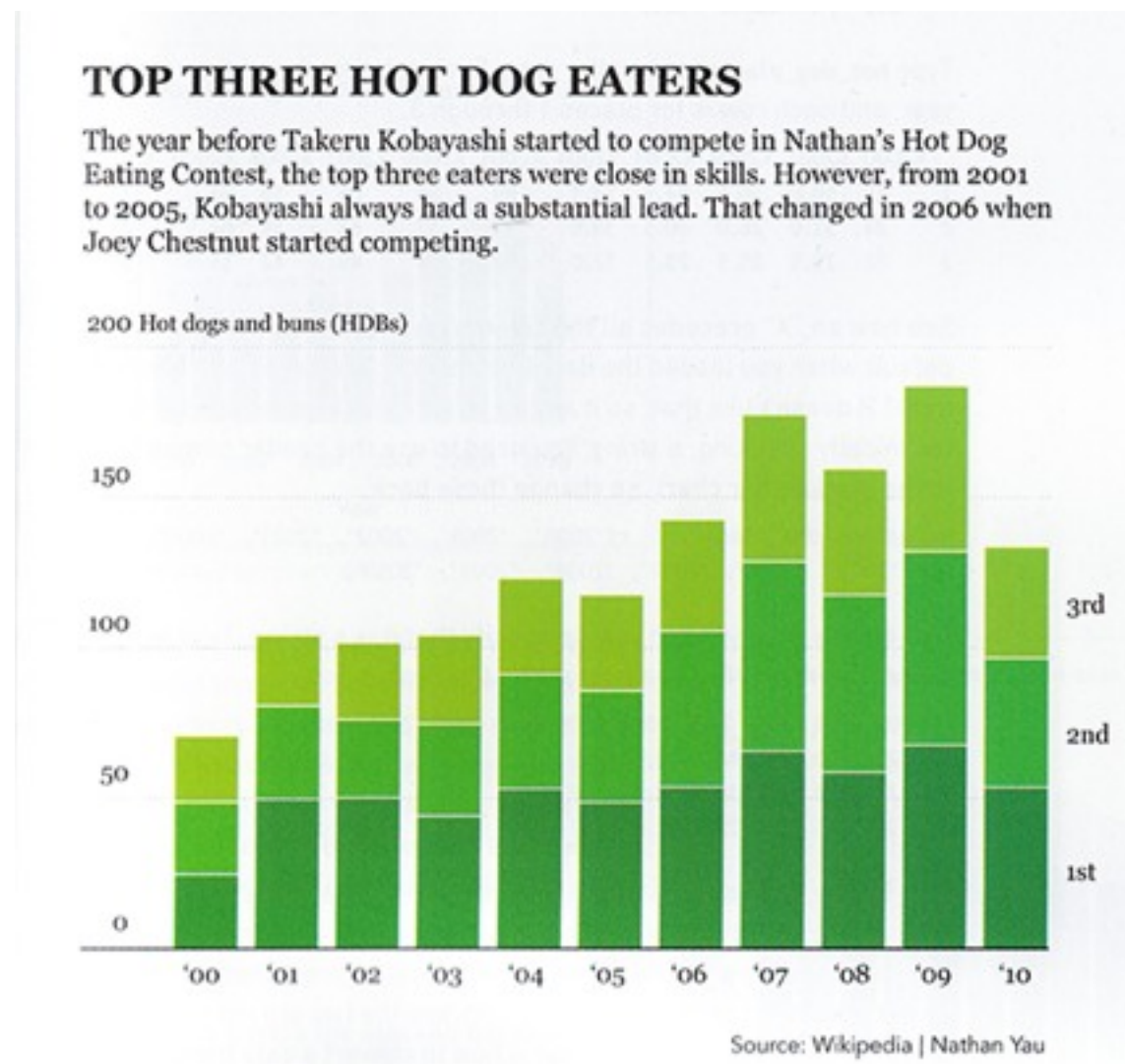
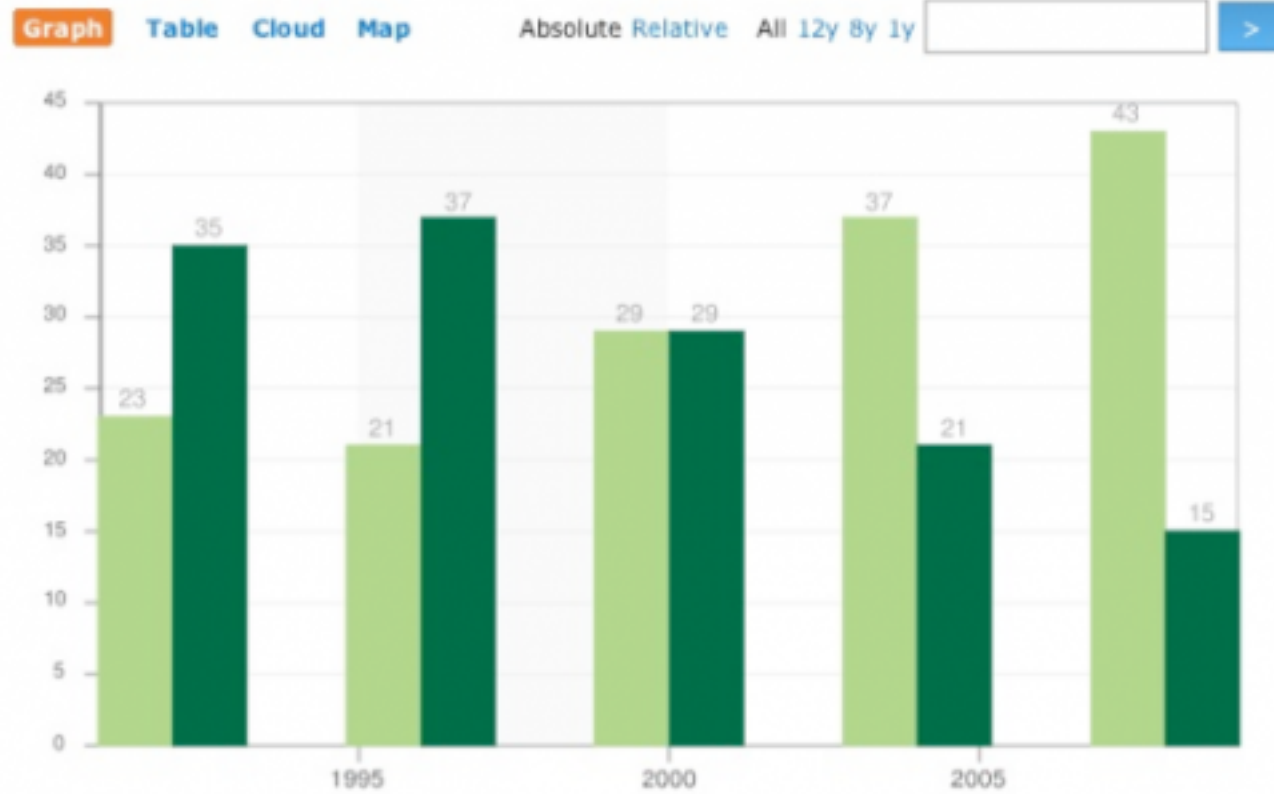Fall2012/New School
zannah marsh
zmarsh10@gmail.com

Plan:

- City Symphonies Sonification Project
- Convention Word Bubbles
- Stacked Bars and Area Graphs
- Processing: Bar Charts
- **Charles Presents**
- Break
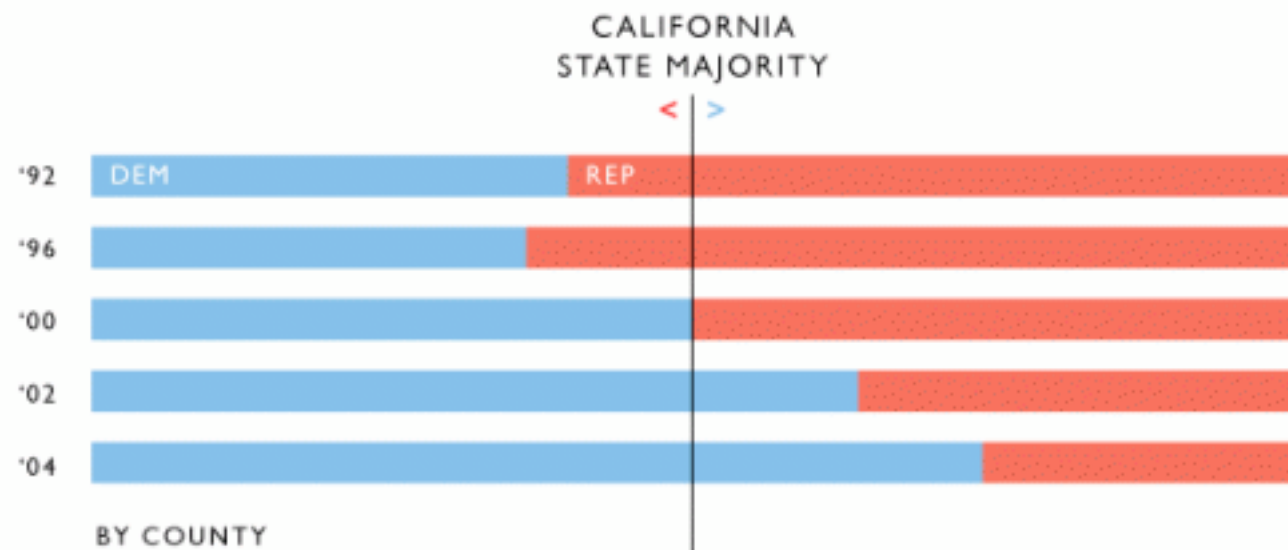- Talk by Angie Waller
- Homework

Stacked Bar

- allows the bar chart to show meaningful subcategories

- bar height represents total

- sections within height represent categories

TOP THREE HOT DOG EATERS

The year before Takeru Kobayashi started to compete in Nathan's Hot Dog Eating Contest, the top three eaters were close in skills. However, from 2001 to 2005, Kobayashi always had a substantial lead. That changed in 2006 when Joey Chestnut started competing.

Source: Wikipedia | Nathan Yau

multiple bar vs stacks...

CALIFORNIA
STATE MAJORITY

REP

DEM

BY COUNTY

'92 '96 '00 '02 '04

CA Political Party Registration Aggregated by County

Percent CA Counties

100
80
60
40
20
0

1995   2000   2005

Year
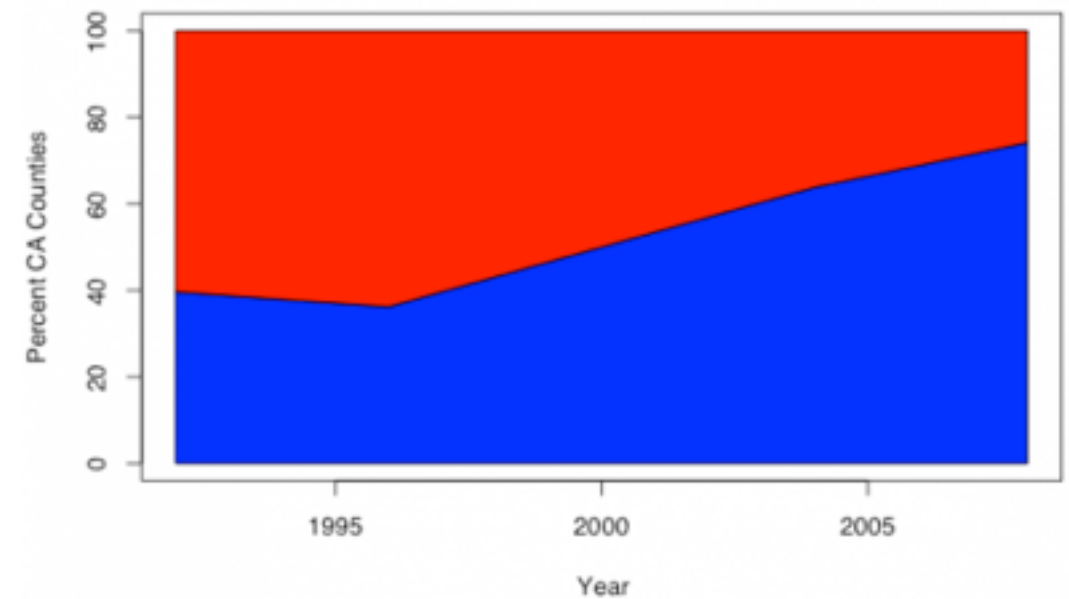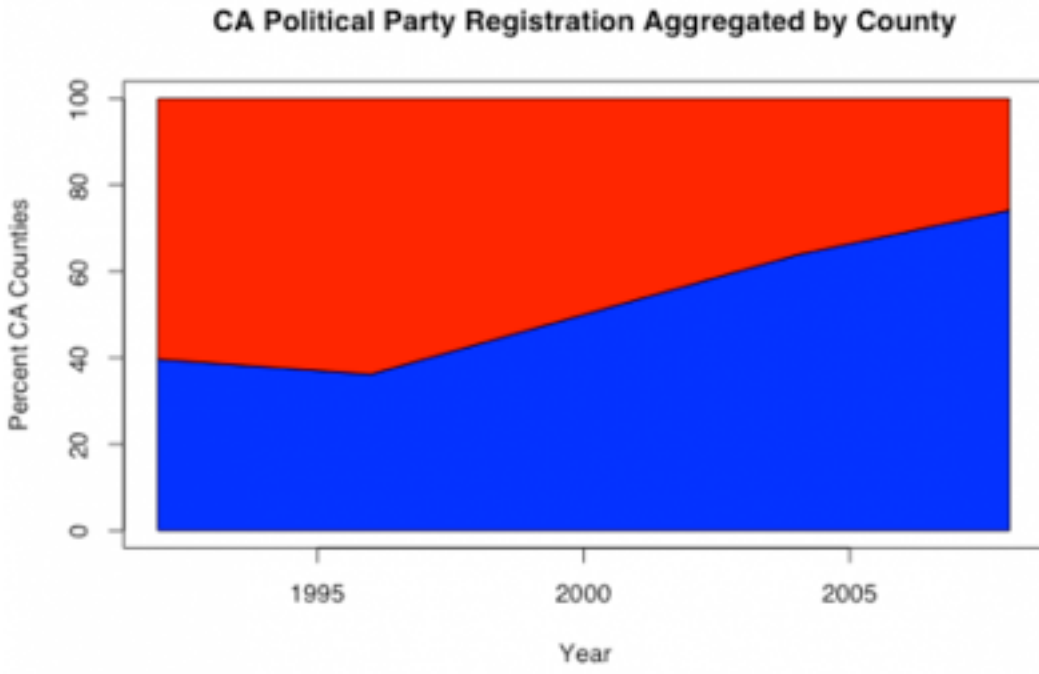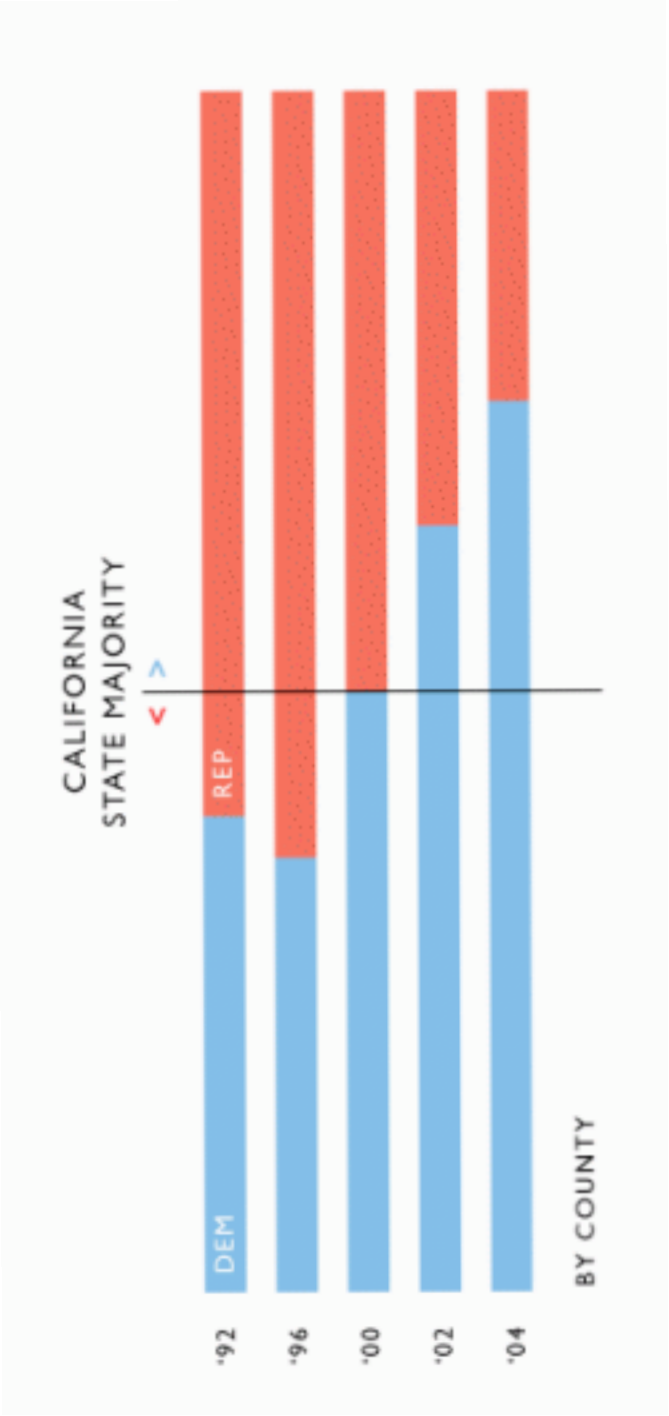
TRAFFIC ACCIDENTS 2005
Number of Persons Involved in Traffic Accidents by Mode of Transportation

Cars | Trucks | Motorcycles, Mopeds | Bicycles | Pedestrians

Hardware
Software
Service
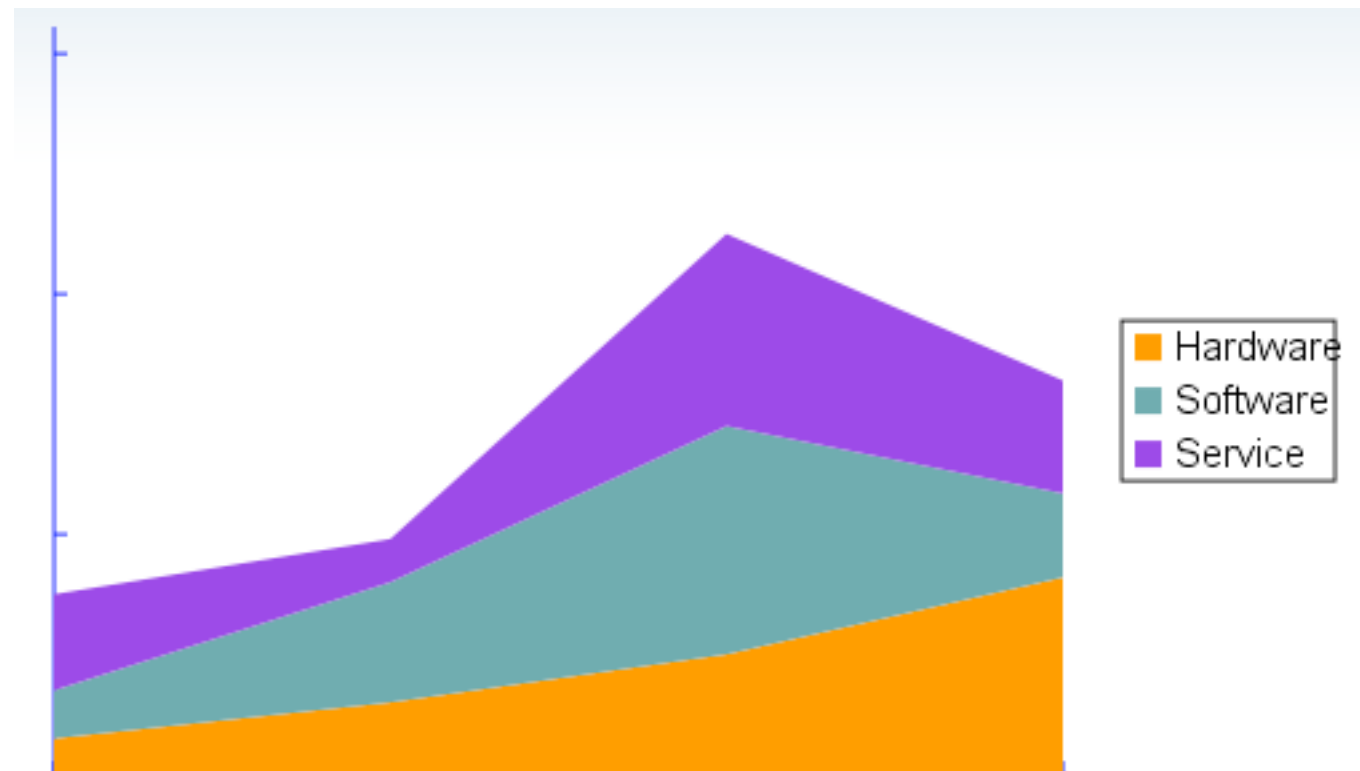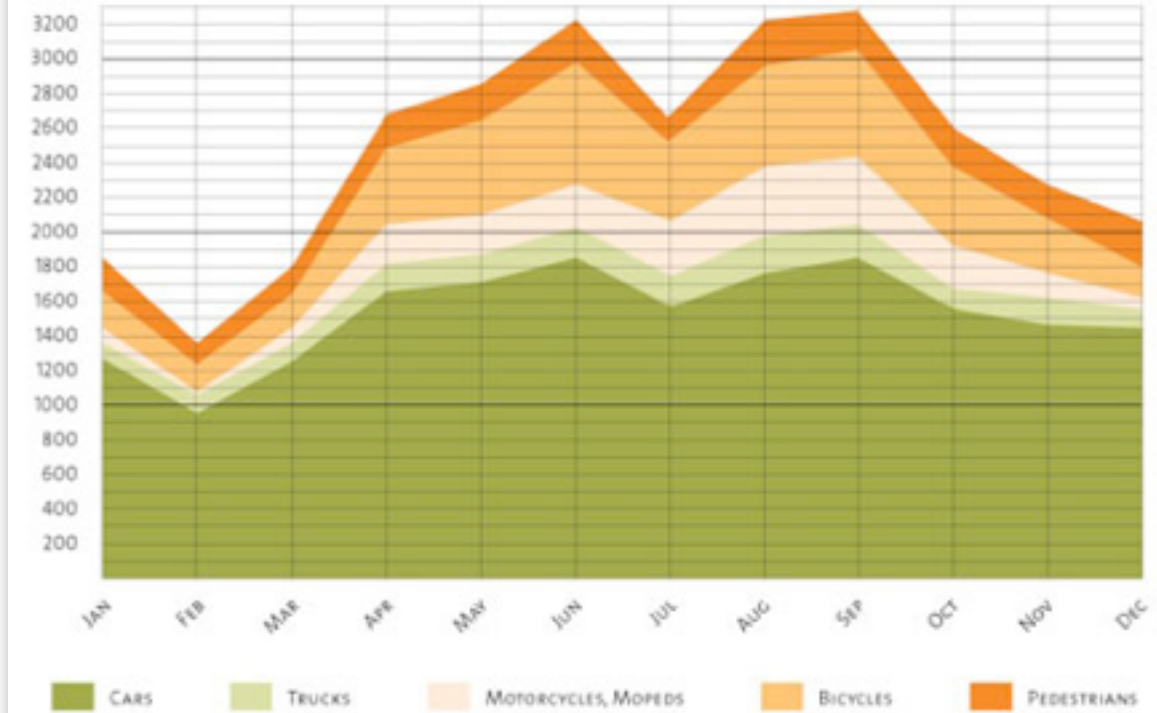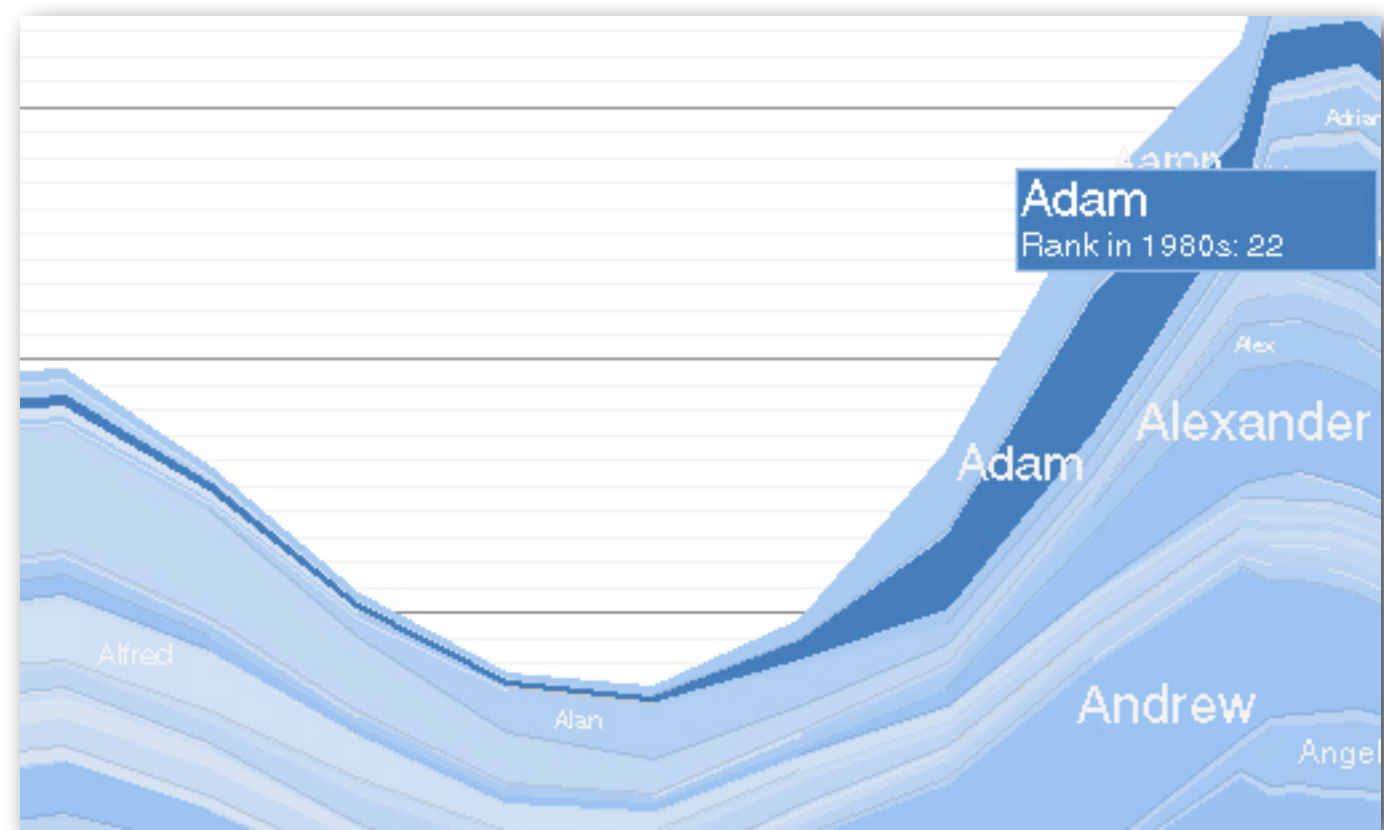
demo: baby name voyager
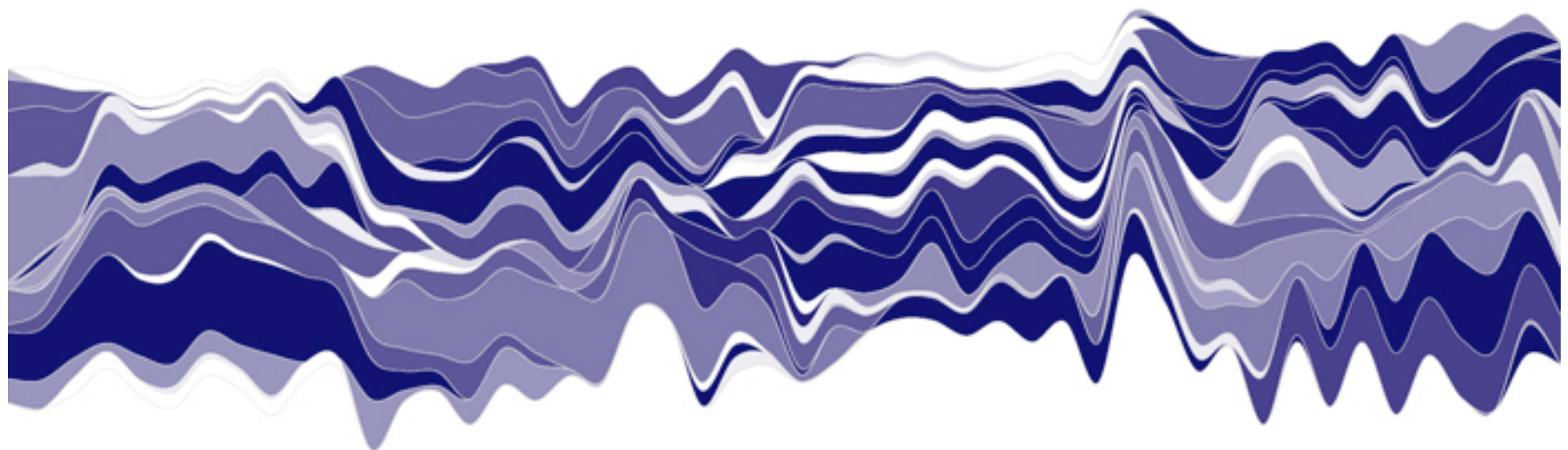
Area Chart

- Stack height shows total over time

- Categories stack within that height

- Similar to stacked bar, connected by time

- Best for data that will be summed (parts of a whole)

- Represent change (trend) over time

- Baseline should be 0

- Distortions?

Processing: Bars

- loop review; array review
- building a conditional to check if mouse is over
- rectMode()
- using a map() function (MINE the data)
- switching data sets

Accessing an Array in a For Loop

the array knows its own length.
it's a variable, accessed like this: **arrayName.length**

use the length of the array as the
test condition for the loop

↓

```
for (int i= 0; i<myAges.length; i++)
{
    println(myAges[i]);   ← just print out each value
                              stored in the array
}
```

X

0   1   2   3   4   5   6

myAges   24   18   5   42   37   12   9
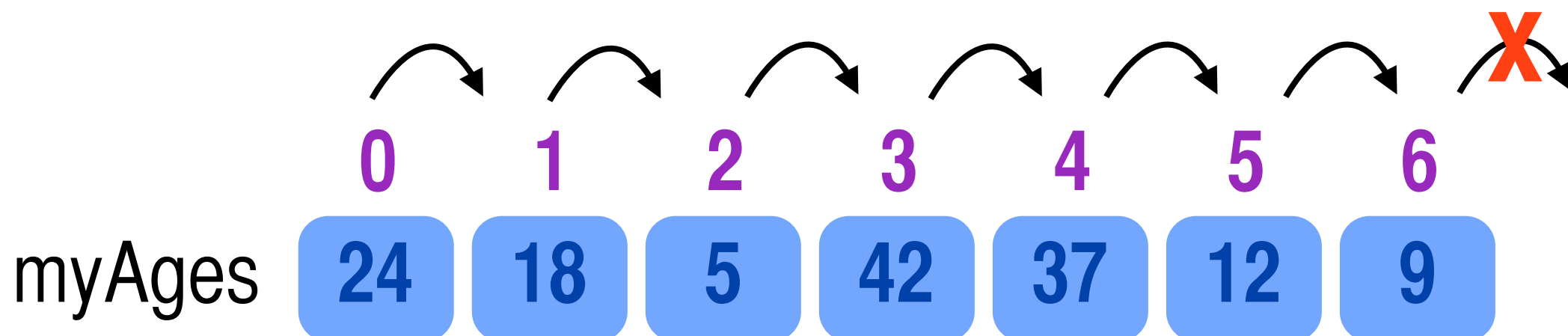
loading Strings

datatype of
contents

↓

name of the new array

↓

name of text file
in quotes
must be in sketch data folder

↓

String [ ] myStringData = loadStrings("ages.txt");

↑

call to load strings

rectMode()

CORNER
default mode
rect(**x,y,w,h**)

CORNERS
an alternate mode
rect(**x1,y1,x2,y2**)

map()

- takes a value, its original range, and a target range, and RETURNS a scaled value (float)

- for example: map(2, 0, 10, 0, 100) = ?

- you must MINE data for low and high numbers in range your ranges

map(original, low, high, new_low, new_high)

Example files

- **Bar.pde**: use a loop to draw a series of bars (rectangles) in default mode, using loaded data for their heights

- **Bar1MouseOver.pde**: use a conditional statement to detect if the mouse is over a bar, and display some text

- **BarBottomUp.pde**: use rectMode(CORNERS) to draw a more traditional (positive value) bar graph

- **BarUpMouseOver.pde**: mouse over version of above sketch

- **BarUpMouseOver1Map.pde**: here data from the initial range is mapped to a new range to fill available space on screen

- **BarUpMouseOver2Modes.pde**: here we load TWO data files and use an if statement to switch between them when the mouse is pressed

Homework 1

- Use some of your personal data and make a bar chart in Processing. Try loading in an array of strings, and modify the checkIfOver() function to display values, text, or extra info when mousing over a given bar.

- Use a boolean value to shift from one data set to another (without having to keep the mouse pressed)

Homework 2

- Continue collection of data. Consider FORMS and approaches for visualizing your data

- Forms: bar charts, scatter plots (sized circles), pie charts, stacked graphs, timelines, Venn diagrams, etc.

- Narrative approach: Feltron-esque call outs and combined forms, NYT-style collage timelines, etc

Moment

A compendium of little things.

FIGURE 19. SOURCE OF FAVORITE MOMENTS

AN ITEM · AN ACTION · SOMETHING SPOKEN · A PERSON

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
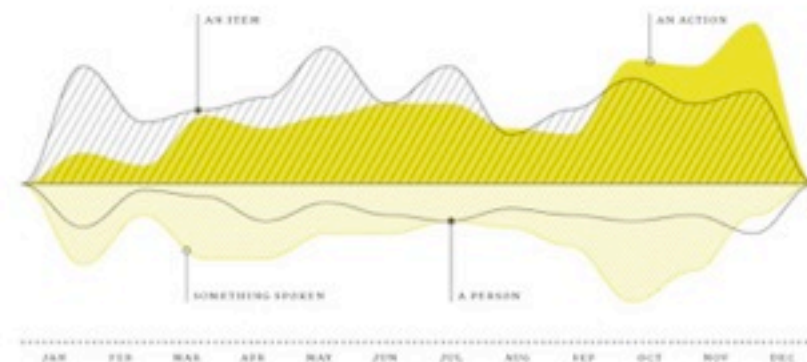
MOMENTS REPORTED

525
AVERAGE 1.44 PER DAY

MOST FREQUENT ACTION-RELATED MOMENT

A Realization
REPORTED 10 TIMES

UNFORTUNATE INCIDENTS

Four
1. THE MISGUIDED NECK BITING
2. THE DRINK PUNCHING
3. THE WHITE WINE SPILL
4. THE ACCIDENTAL PURSE DUMPING

OBJECT-RELATED MOMENTS

Seventy One
$5, A TOOTHBRUSH, AN AGENT PROVOCATEUR CATALOG, AMADOR'S CRISPED TOAST, AN ARDUINO(M), BALLOONS, A BEACH TOWEL, BED-AS-COUCH, BIKE POLO, BOWLING WINS, A CAB RIDE, CANGREJO, A CAT ON A LEASH, A COLLAGE, COMMON SNEAKERS, DAYTUM CHARTS, DJING, AN ENTIRE MORNING, THE FAILSAFE HEADACHE-BUSTER, FIREWORKS, A BOLDER STRUCTURE FOR ORGANIZING TYPEFACES, FRANCIS WITH HIS TOY, A GALLON OF WATER, A GIANT CHIHUAHUA, A GRIZZLY BEAR, GYPSIES, HIGH FIVES, A WEBSITE, THE HOT TUB, INFORMATION GRAPHICS, AN INVITATION, KID ROCK VIDEO, KINGSLEY, KISSES ON THE CHEEK, KNOWING SMILES, A LETTER, THE LIMO, MATT'S SHORT PANTS, A MONGOOSE PICTURE, NEW DAYTUM FEATURES, NICK WITH A DAISY, NICK WITHOUT HIS GLASSES, NO PANTS TUESDAY, A NOTEBOOK, OCTOPODES, OLGA'S AUSTRALIAN ACCENT, AN OPEN STREET MAP EMAIL, AN OUTFIT, OUTPUT FROM THE TWITTER SENTIMENT ANALYSIS, A PHOTO, PHOTOGRAPHS, A PINK SHIRT, A PRESENTATION, A REPORT, THE RIDICULOUSLY SMALL LIFE, SEATS, SHORTS, A TATTOO, THE SOMTH-OP SPREAD, THE GIFT, THE GOOD TIMES, THE LAST TWO HOURS, THE NAM NAM FILM, THE THREE-MINUTE RACE, THE USELESS GATE, THE VERY LAST MOMENT, THE VIDEO OF MATT, A TRAVEL JOURNAL, A TASTE-WORTHY ILLUSTRATION, THE WATER POLICE, WORK.

MUSIC-RELATED MOMENTS

Five
ARCADE FIRE, GRIZZLY BEAR, SINGING, THE MARIGUSIA MIX, ALMOST THREE-PART HARMONY OF RADIOHEAD'S "BLACK STAR"

PEOPLE-RELATED MOMENTS

58
24 DIFFERENT PEOPLE

MONTH WITH THE MOST MOMENTS

October
65 MOMENTS

ENCOUNTERS WITHOUT A MOMENT

79

PRIVATE MOMENTS

Three

JOKES REPORTED

14

Nick's OCD, but messy workspace. And his anxiety about the mess.
ELISE, JANUARY 12

Nick made two jokes! One, inadvertently, about flying in and one about a graph.
MARIANA, MARCH 3

The slow realization that both our coffees were cold, followed by the acceptance of that situation and following enjoyment of said coffee.
MATT M, APRIL 8

First sip of cold BK lager.
ROB F, APRIL 17

Realizing that we have a common pair of sneakers.
ROB D, MAY 8

Nicholas acknowledged that Oakland has become San Francisco's Brooklyn, which I feel is important for non-SF residents to understand.
MICHAL, MAY 15

Leaving work when it was still light outside.
DANIELLE, JUNE 6

The pun about Juneau.
OLGA, AUG 19

The part where we bowled.
CAITLIN, DECEMBER 13

Dessert. The potatoes next to the burger. The burger.
GLENN, DECEMBER 19

Watching Bill Murray drunkenly dig out his station wagon from the snow.
MATTHEW G, DECEMBER 19

Etc.

Aggregated miscellany.
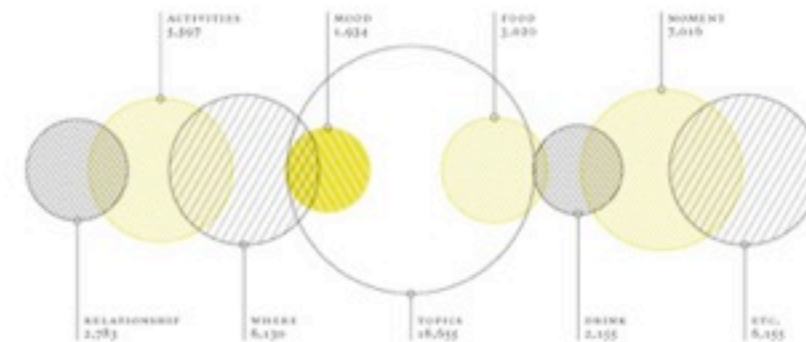
FIGURE 20. SURVEY WORDS PER SECTION

ACTIVITIES 3,307 · MOOD 1,034 · FOOD 3,020 · MOMENTS 7,019 · RELATIONSHIP 2,783 · WHERE 6,130 · TOPICS 18,655 · DRINK 2,155 · ETC. 6,155

FIGURE 21. FREQUENCY OF PARTICIPANT FIRST NAMES

4	5	7	7	4	6
AARON	JOHN OR JONATHAN	MICHAEL, MICHAL OR MIKE	NICHOLAS, NICK OR NICOLAS	ROBERT OR ROB	SARA OR SARAH

TOTAL WORDS SUBMITTED

51,445

URLS RECEIVED

19

MOST CONSECUTIVE ! MARKS USED

Eight

MOST REPOSTS SUBMITTED

78
OLGA, 14% OF TOTAL

FIREFLY SIGHTINGS

Two
JUNE 28 AND JULY 1

CURSE WORDS SUBMITTED

Two
14 TOTAL INSTANCES

MOST ENCOUNTERS WITH ONE PERSON

226
MATTHEW G, 12.3% OF ENCOUNTERS

CLOTHING REFERENCES

32
BLACK PANTS, CHALK-STRIPE TEE, COAT, HAT, JACKET, NIKE SNEAKERS, NEW SHIRT, NEW WHITE SHOES, NICE KICKS, ORANGE-SOLED RUNNING SHOES, OREO SHOES, PINK T-SHIRT, PINK V-NECK, PURPLE SHIRT, RAVER PANTS, SEAGULL-FRONT BELT, SHOES, SHORTS, SNEAKER, V-NECK SWEATER, VIOLET BUTTON-DOWN, WEEKEND/HOUSE CLOTHES

BACKPACK REFERENCES

13
7 WITH, 5 WITHOUT AND 1 OTHER

AVERAGE TEMPERATURE REPORTED

88°

MILES REPORTED

12.13

They just wouldn't let him into China.
DANIELLE, JANUARY 19

Nicholas does not like hard boiled eggs.
JESSICA S, FEBRUARY 26

I think it's funny that Nick carries a backpack.
BONNIE, MARCH 1

It seems like Nicholas has a very strong prescription for his glasses.
CORY, APRIL 24

It was a roasting hot day in Mill Valley, around 88-91.
JOSHUA O, MAY 17

We were out late for a school night.
JOELLE, JUNE 4

I'd like to retract the Teflon comment.
HEATHER, JUNE 4

Hi King.
GILLIAN, JUNE 13

I turned off the taxi television with my mind.
OLGA, AUGUST 17

Unfortunate lack of talk around sex, drugs, and rock and roll.
JULIAN, OCTOBER 23

Nice to meet you.
MARLIZ, OCTOBER 24

I had an awesome time!
RYAN C, DECEMBER 31

31.5%
1960-62

33.1
1971-74

32.3
1976-80

32.7
1988-94

33.1
1999-2000

33.6
2001-02

35.2 2005-06

33.9 2003-04
33.2

32.1 2005-06

Percent of Americans
age 20-74 who are
Overweight but not obese

Percent of Americans age 20-74
who are overweight, including the obese:

1960-62

2005-06

44.8

67.3

23.3

Percent of Americans
age 20-74 who are
Obese

32.1

31.0

13.3%

14.6

15.1

| 1950s | 1960s | 1970s | 1980s | 1990s | 2000s | 2010s |

1951:
"The Jack
LaLanne
Show"
begins. ▶

1961: The Kennedy
administration
organizes a confer-
ence on physical
fitness and revamps
the President's Council
on Youth Fitness.
(Above: LaLanne with
students, early
1960s.)

1968: Kenneth H. Cooper
publishes "Aerobics," which
promotes running,
swimming and other such
exercises to improve the
heart and lungs.

1974: Richard Simmons
opens the Slimmons
exercise studio.

◀ 1977: James F. Fixx
publishes "The
Complete Book of
Running," which
helps popularize
competitive running.

1981: Olivia Newton-John
releases the sexually suggestive
exercise-themed song "Physical."

1982: Jane Fonda releases
her first exercise video,
"Jane Fonda's Workout."

1996: Madonna takes up yoga
to get back in shape following
the birth of her daughter.

2002: George W. Bush
tells Runner's World
magazine that his
running times became
"faster right after the
war began."

2006: Nintendo intro-
duces the Wii, ushering ▶
in "lounge fitness."

2010:
Michelle
Obama
introduces
Let's Move,
a campaign
to fight
childhood
obesity.