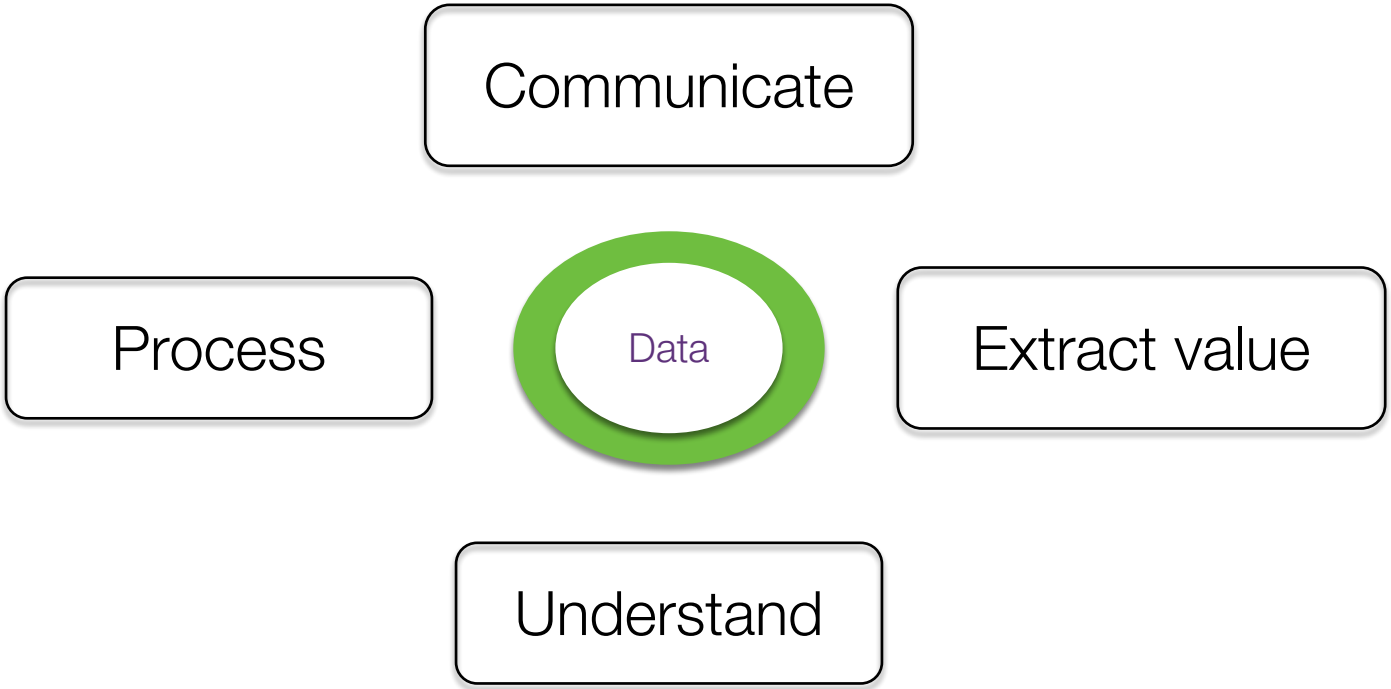
Why data analytics

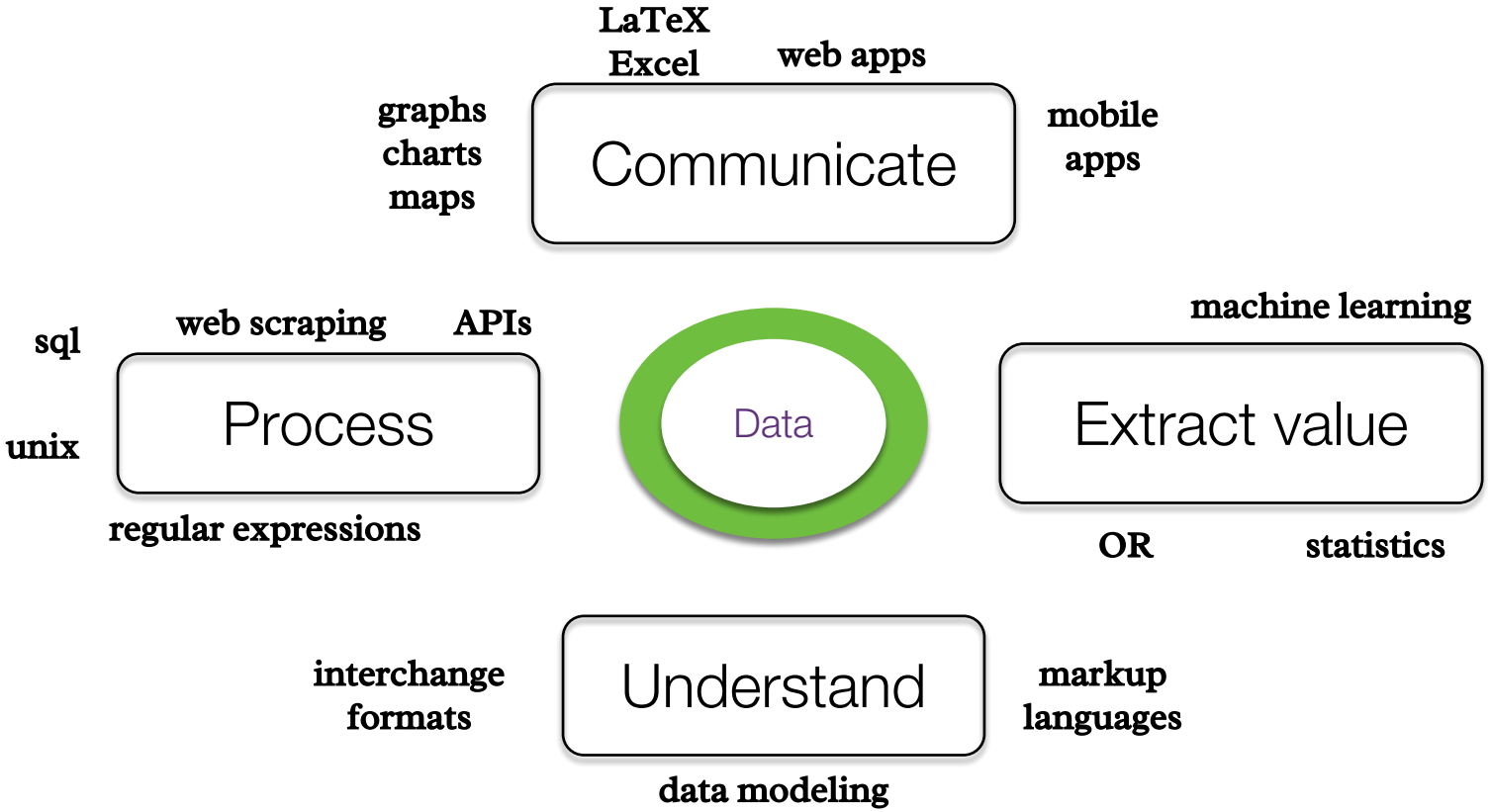
Centrality of data

The ability to take data - to be able to understand it, to process it, to extract value from it, to visualize it, to communicate it is going to be a hugely important skill in the next decades, not only at the professional level but even at the educational level for elementary school kids, for high school kids, for college kids. Because now we really do have essentially free and ubiquitous data. So the complimentary scarce factor is the ability to understand that data and extract value from it.

–Hal Varian (*chief economist, Google*)


Communicate
Process
Data
Extract value
Understand

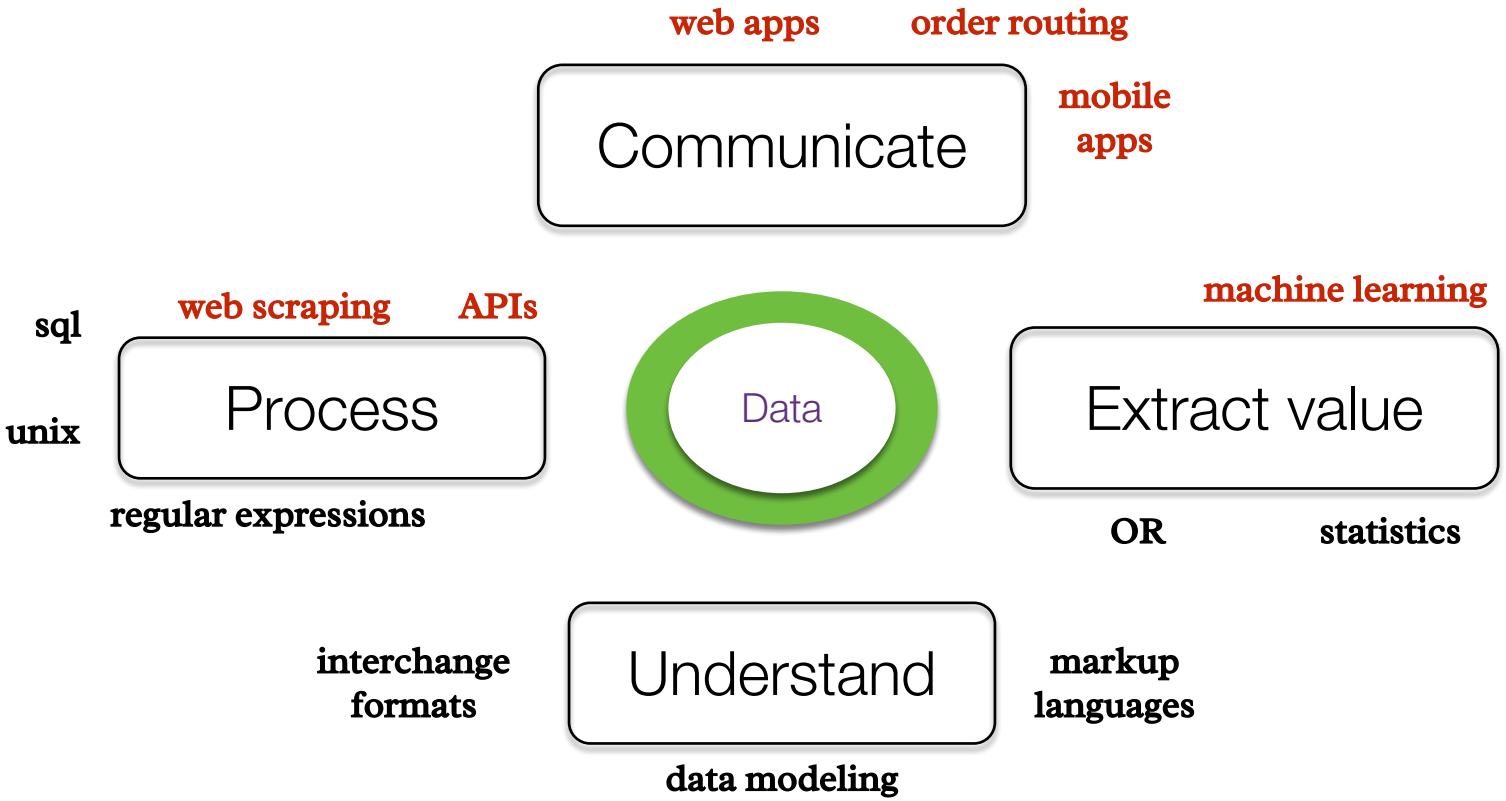
Programming is the interface between data and everything else


LaTeX
Excel
web apps
graphs
charts
maps
Communicate
mobile
apps
sql
web scraping
APIs
machine learning
unix
Process
Data
Extract value
regular expressions
OR
statistics
interchange
formats
Understand
markup
languages
data modeling

Data can be dead or alive

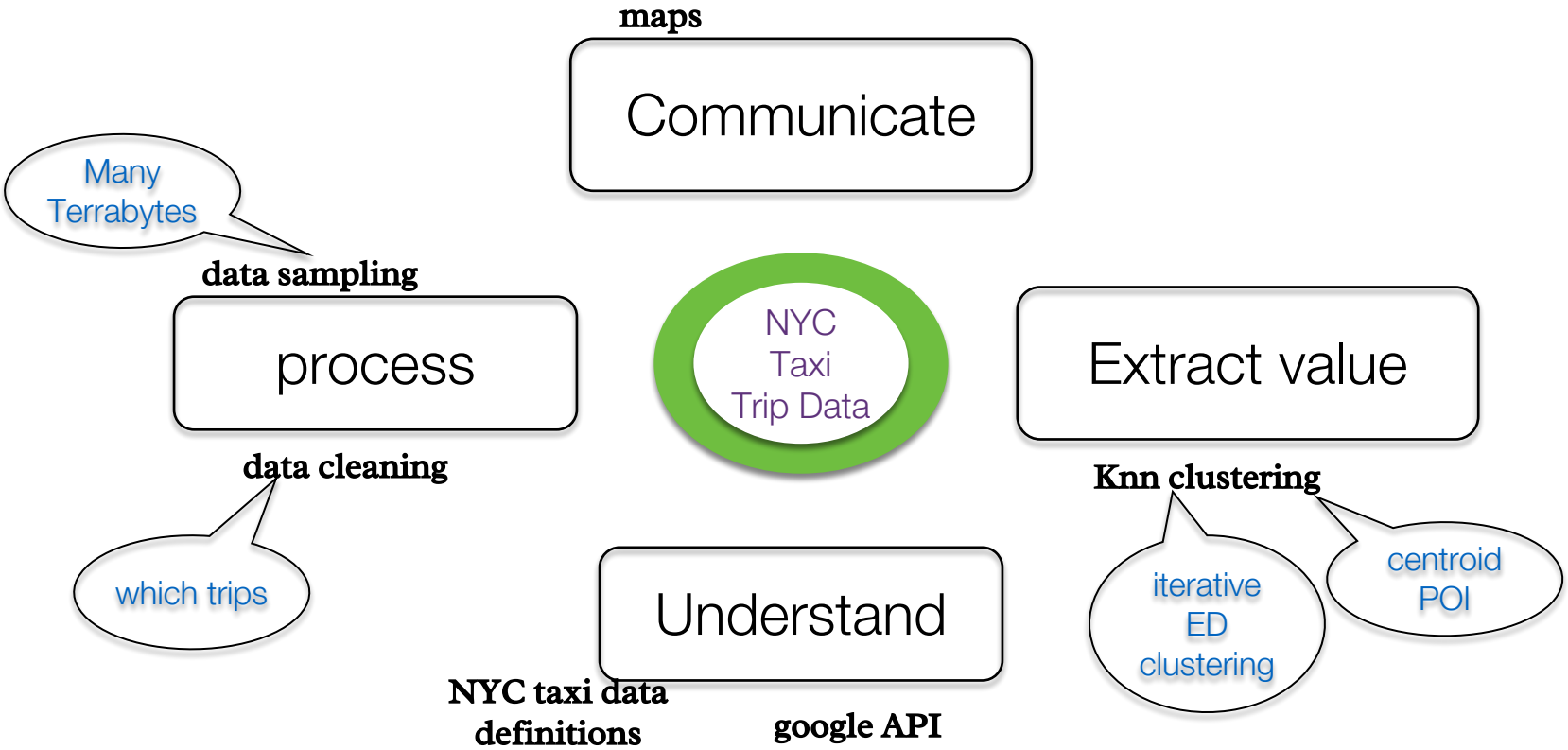
High frequency market makers

track news stories
do sentiment analysis
learn/re-learn cross correlations
update markets in real time

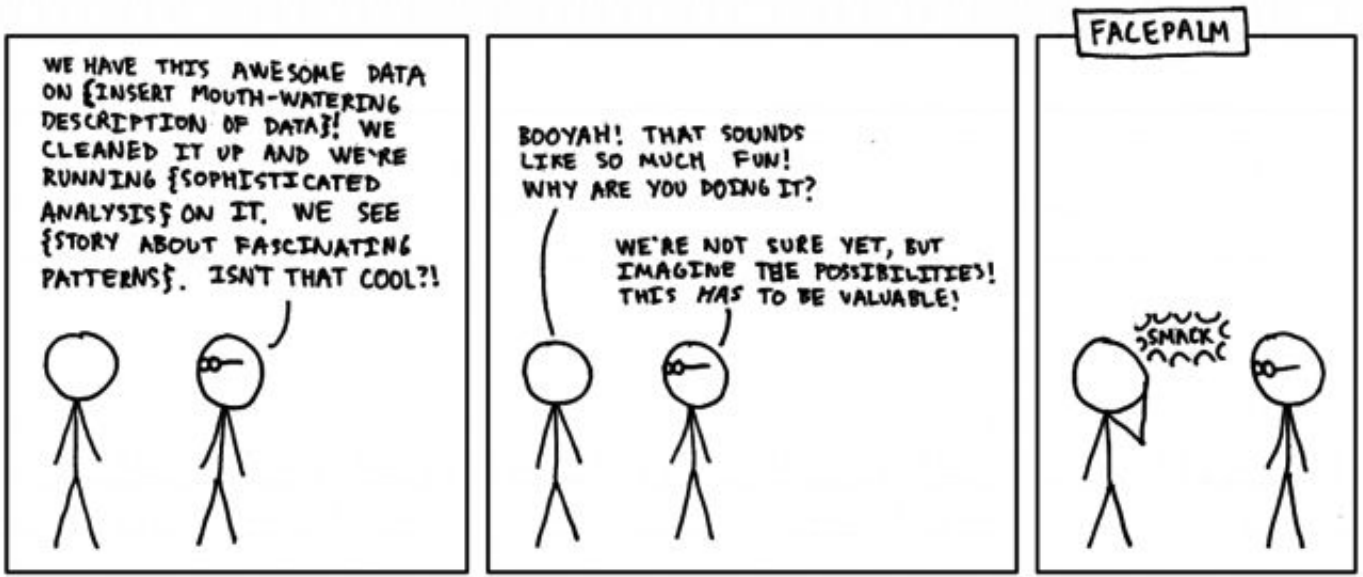

web apps
order routing
Communicate
mobile apps
sql
web scraping
APIs
machine learning
Process
Data
Extract value
unix
regular expressions
OR
statistics
interchange formats
Understand
markup languages
data modeling

Bankers Travel Patterns

Where does a banker live?
Where does he/she go after work?


maps
Communicate
Many Terrabytes
data sampling
process
NYC Taxi Trip Data
Extract value
data cleaning
Knn clustering
which trips
iterative ED clustering
centroid POI
Understand
NYC taxi data definitions
google API

what you can bring to the table


WE HAVE THIS AWESOME DATA ON {INSERT MOUTH-WATERING DESCRIPTION OF DATA}! WE CLEANED IT UP AND WE'RE RUNNING {SOPHISTICATED ANALYSIS} ON IT. WE SEE {STORY ABOUT FASCINATING PATTERNS}. ISN'T THAT COOL?!
BOOYAH! THAT SOUNDS LIKE SO MUCH FUN! WHY ARE YOU DOING IT?
WE'RE NOT SURE YET, BUT IMAGINE THE POSSIBILITIES! THIS *HAS* TO BE VALUABLE!
FACEPALM
SMACK

What you should expect

1. Lots of assignments
2. A data analysis project
3. A bunch of pop quizzes
4. Be prepared to present your results to everyone at the end of the semester

What I expect

1. Timely submission of assignments
   - -25% for submission in the week after the due date
   - -100% after that
2. Be in class on time
3. That you don’t hesitate to ask questions (in class, of the TAs, during office hours, by email, on the discussion forums)

Think big! Have fun!