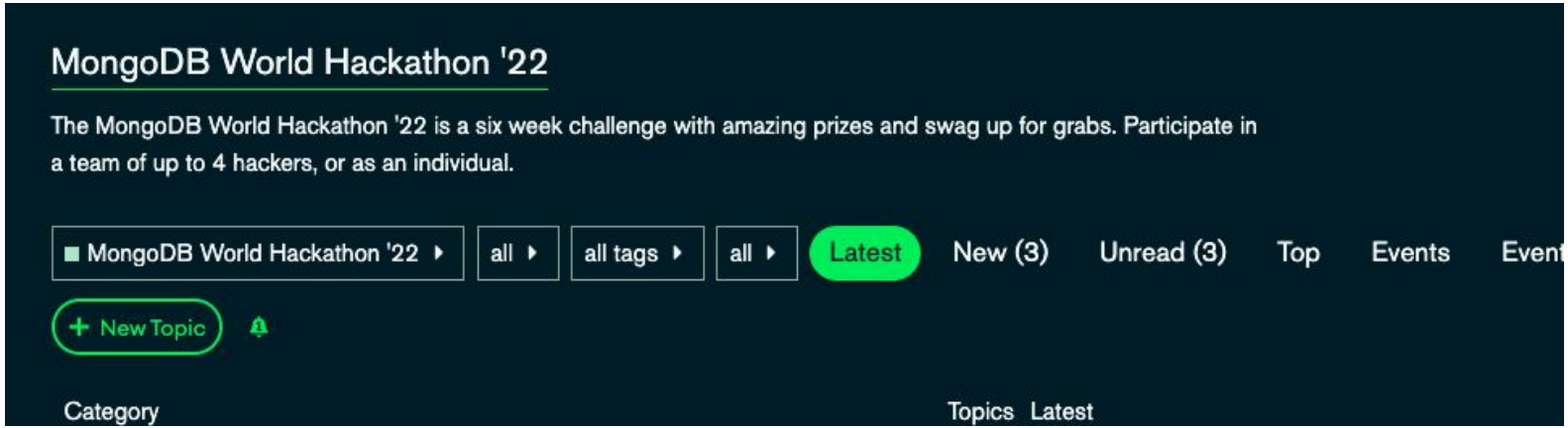
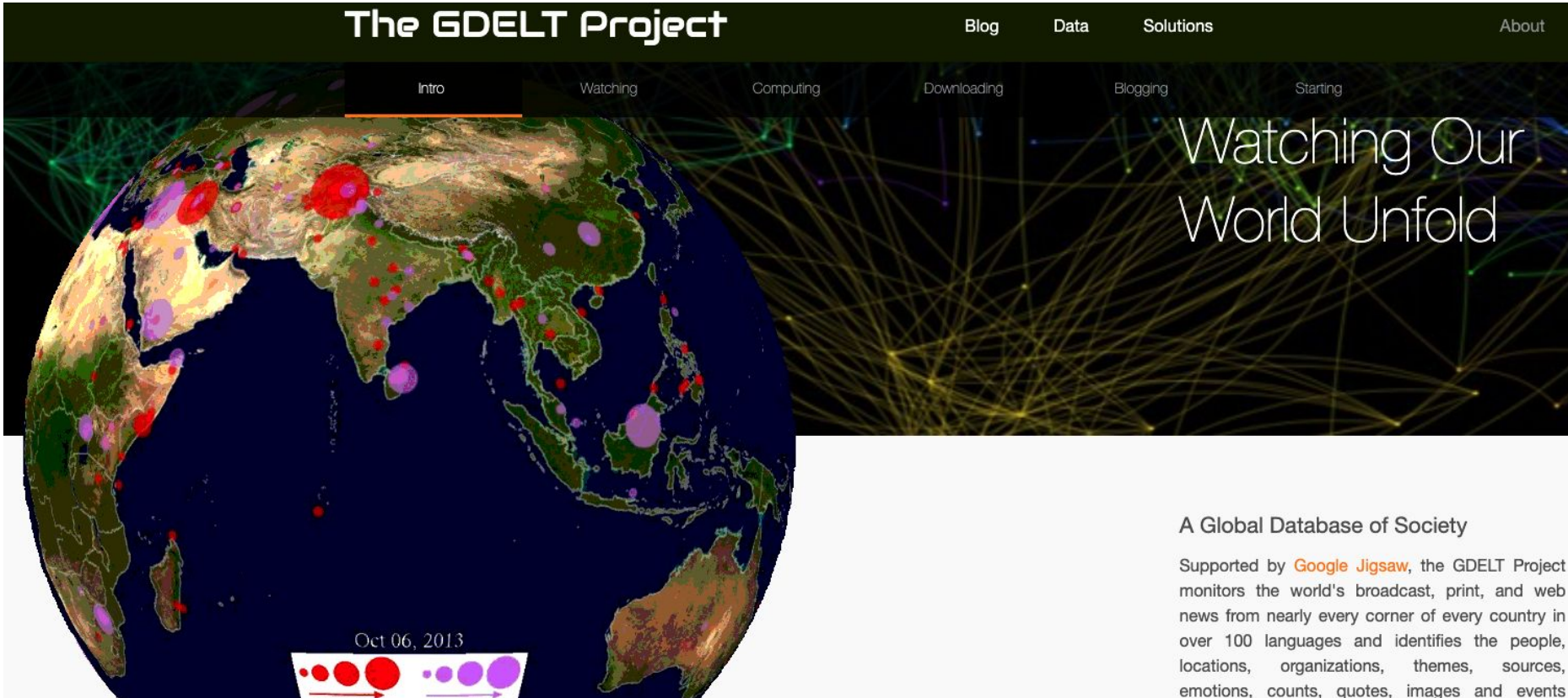
What is this all about?

How to understand GDELT with analysis with MongoDB, Atlas, Atlas Charts and ggplot2 (R)



GDELT - An on-line source of current events around the world



GDELT has Events

Events have Actors (Govt, People, Organizations)

Actor1 - Initiator

Actor2 - Responder

EventCode - What happened

[Cameo Event Codes]

Chapter 6

CAMEO EVENT CODES

01: MAKE PUBLIC STATEMENT
010: Make statement, not specified below
011: Decline comment
012: Make pessimistic comment
013: Make optimistic comment
014: Consider policy option
015: Acknowledge or claim responsibility
016: Deny responsibility
017: Engage in symbolic act
018: Make empathetic comment
019: Express accord

02: APPEAL
020: Make an appeal or request, not specified below
021: Appeal for material cooperation, not specified below
  0211: Appeal for economic cooperation
  0212: Appeal for military cooperation
  0213: Appeal for judicial cooperation
  0214: Appeal for intelligence
022: Appeal for diplomatic cooperation (such as policy support)
023: Appeal for aid, not specified below
  0231: Appeal for economic aid
  0232: Appeal for military aid
  0233: Appeal for humanitarian aid
  0234: Appeal for military protection or peacekeeping
024: Appeal for political reform, not specified below
  0241: Appeal for change in leadership
  0242: Appeal for policy change
  0243: Appeal for rights
  0244: Appeal for change in institutions, regime

How to work with the Data

Files distributed as zip files CSV format

Many events means a large dataset

New events are being added continuously.

Are all countries of equal interest, or some countries get more coverage?

What can be learnt from the which Actors are paired together (Actor1 / Actor2)?

What events dominate?, GoldsteinScale, AvgTone …

WHAT IS ALL THIS ABOUT?

Mongo Rules

Atlas is fast, and there are plans for learning and development *M0 cluster*

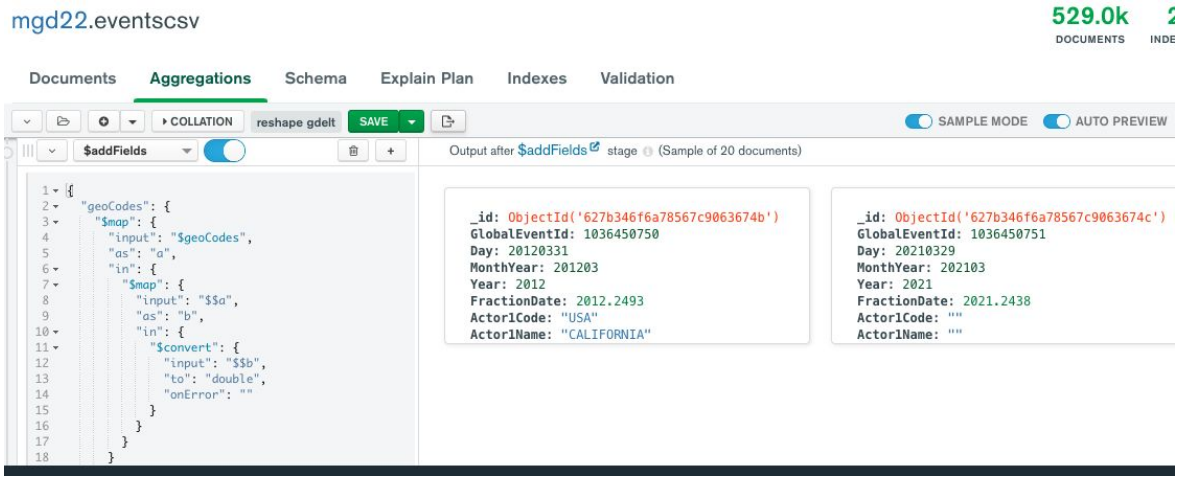
Mongo Query Language is rich, and beyond simple queries there is a lambda logic

DSL - Aggregation.

Tooling: Compass

Atlas Charts

Interoperability



See my [blog]

R - ggplot2

How to get the data into R:

Use mongolite as follows:

```
library( dply)
library( ggplot2)
library( mongolite)
hackDB = mongo( collection="eventscsv", db="mgd22", url=mongoworld)
```

Where mongoworld = mongodb+srv://yyyy:xxxxxxxxx@mongoworld.rgeiy.mongodb.net/test?retryWrites=true&w=majority

Using the mongolite connection

Just like the console - that sort of simple

% Create a query or an aggregation:

Filter2 = { "Actor1Code": { "$in": ["AUS", "FIN", "IRN", "ISR", "ITA", "JEW", "JPN", "FRA", "RUS", "SWZ", "TUR", "UKR"] }, "SOURCEURL": { "$exists": 1 }

% Load the data into a data.frame (R is painfully similar to Pandas)

mongodata <- hackDB$find(filter2)

> summary(mongodata$Day)

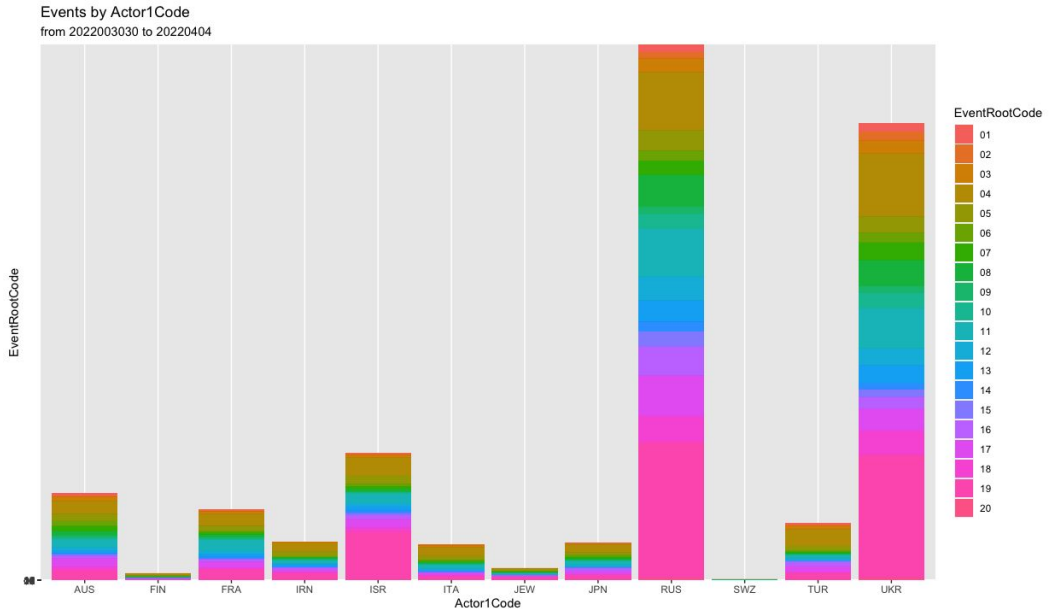
    Min. 1st Qu.   Median   Mean 3rd Qu.   Max.

20120331 20220329 20220401 20220292 20220403 20220404

How much data ?

> nrow(mongodata)

[1] 69165



What was that command again?

```
mongodata %>%
    group_by(Actor1Code,EventRootCode) %>%
    ggplot( aes( x=Actor1Code,fill=EventRootCode, y=EventRootCode)) +
   geom_col() +
   labs( title="Events by Actor1Code",
       subtitle="from 2022003030 to 20220404")
```

R is powerful but ggplot2 is a learning investment

Atlas Charts also powerful but also really easy