D3 and Ufora

Dr Jonathan Roberts

When do you use D3?

- During analysis?
  - exploratory plots are probably made in matplotlib or matlab or R
- D3 comes in when we want to make it pretty.
  - What if we could use D3 as part of the data exploration?

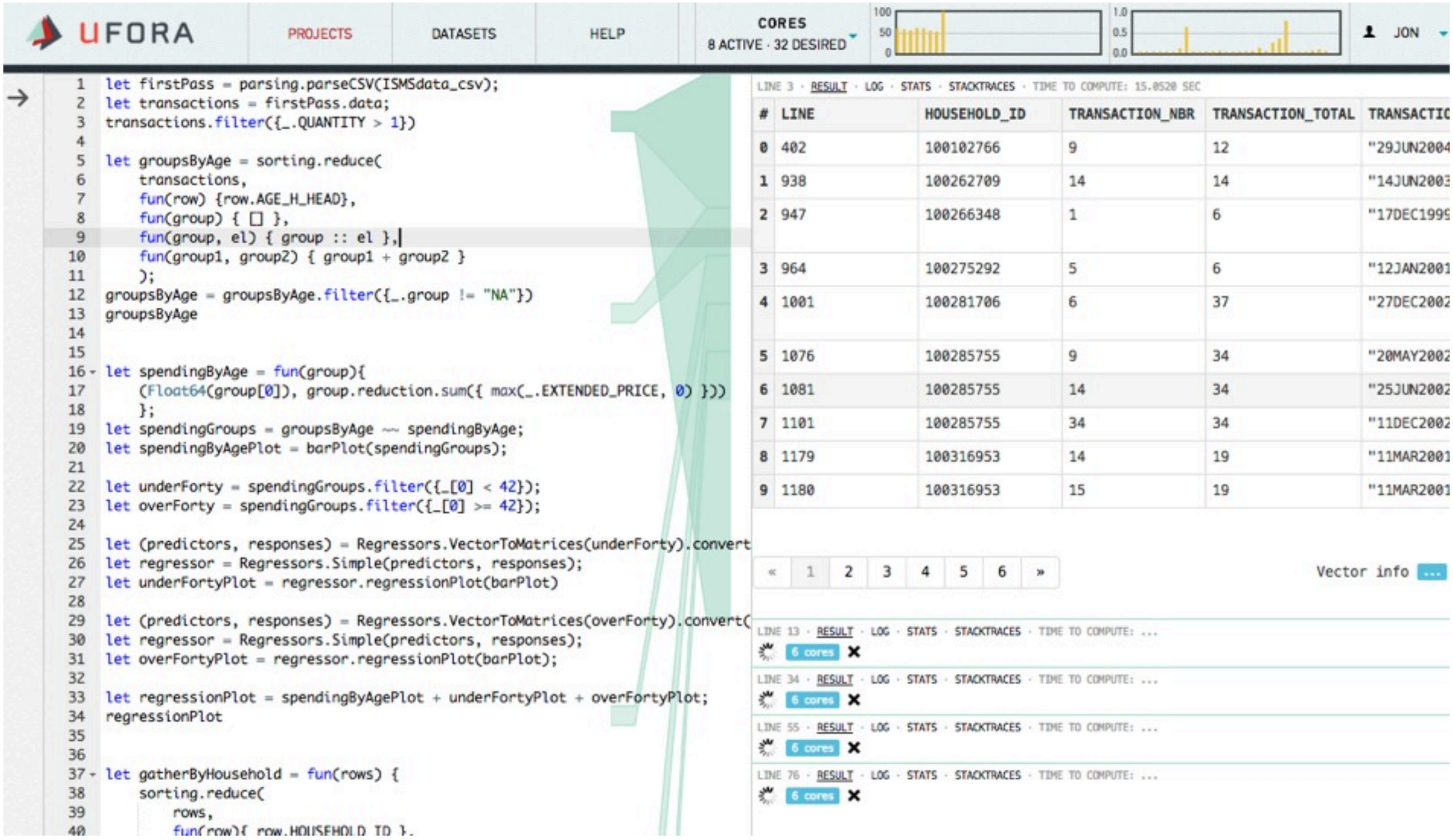
What's a Ufora?

- Fora is a language that's perfectly suited for parallel computing
- Ufora (the company) develops Fora and the runtime that underpins the parallelism

But I don't code in parallel!

- Fora parallelises for you
- Fora runs on clusters (or across the cores of a single machine) and distributes the work, and the data, without you having to think about it.

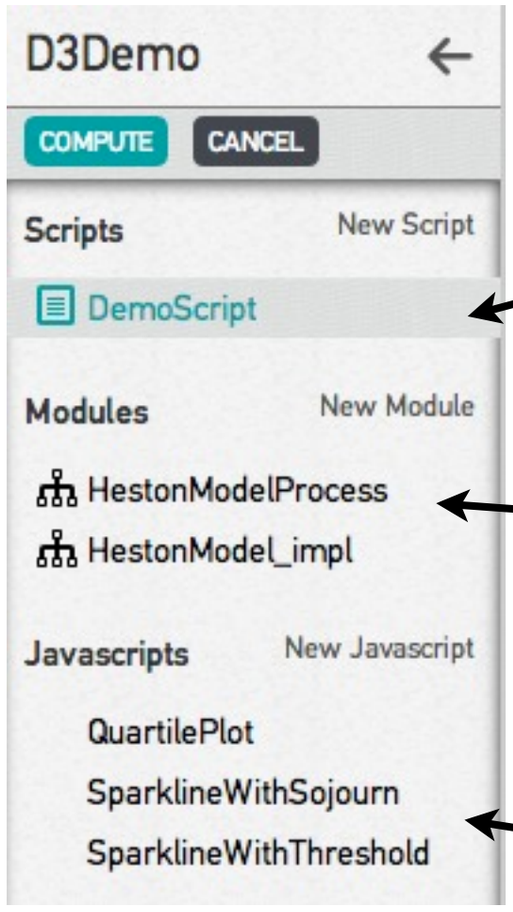
It can be a cloud computer - so there's a browser based IDE



Enter D3

- As the data is transferred via json, why not integrate D3 at the heart of the IDE?

Code Javascript as a Module

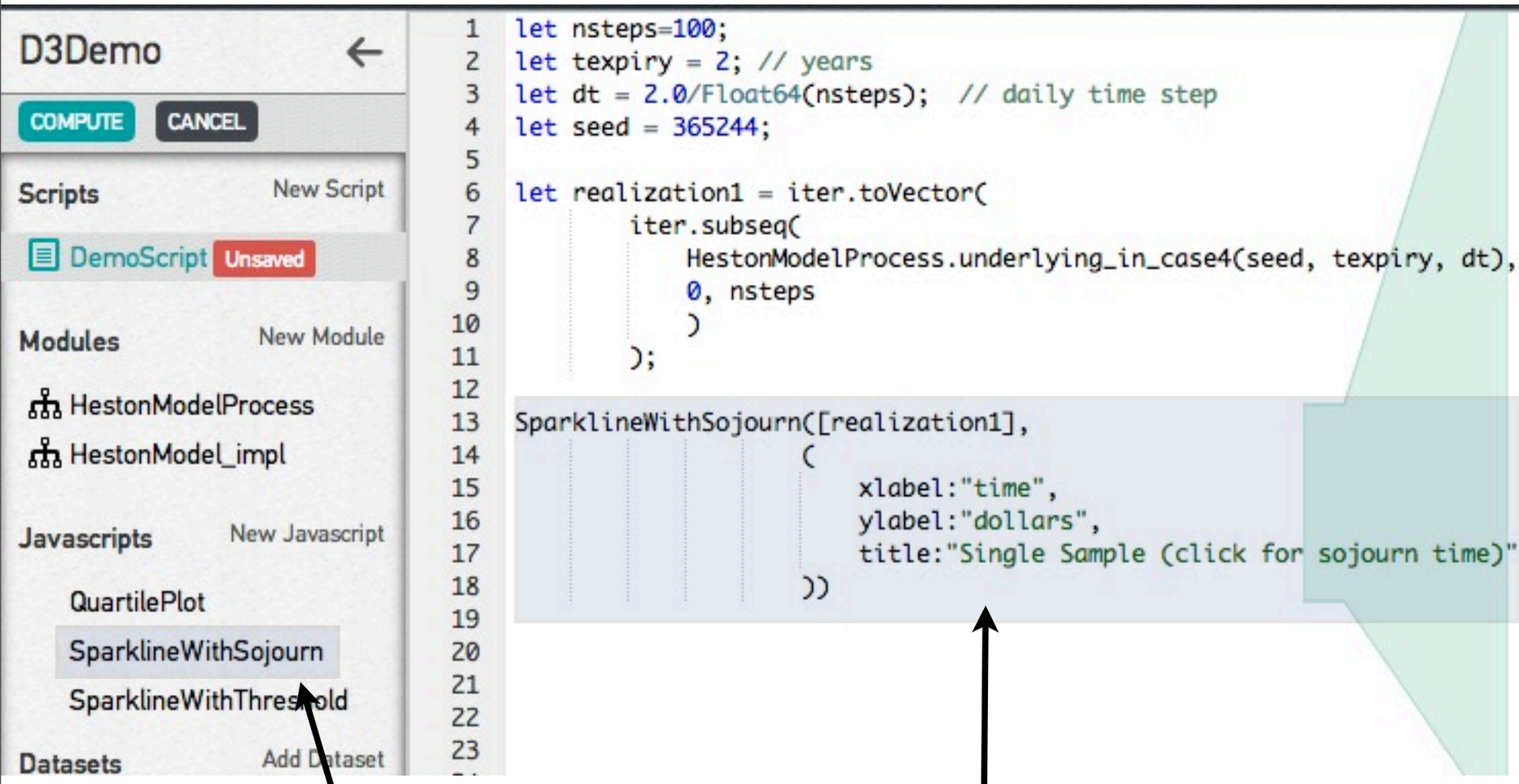


Fora Scripts

Fora Modules

Javascript Modules

and just call it as a function



Module

Function Call

Output!

Just Like That?

- There are a couple of tricks to it:
  - The function gets called once when the line of code executes
  - Therefore the modules are a single function
  - The function takes an ID that specifies the div.

```
function DrawSparkline(elementSelector, lines, options){

var opts = {
    "width":550,
    "height":350,
    "margin":40,
    "xlabel":"",
    "ylabel":"",
    "title":""
};

for(var k in options){
    if(k in opts){
        opts[k]=options[k];
    }
}

$(elementSelector).empty();
```

Wrapper function
(with div selector)

Use defaults,
or overwrite with inputs

Clear the div
(we have jQuery too!)

Then write D3 like you would normally!
(see demo and github for the live code)

To find out more

- Sign up for updates about Ufora:

  www.ufora.com/subscribe

- Check out the GitHub for the D3 code (coming soon after this meetup)

  https://github.com/ufora/d3plots