

TAKING THE SCARY OUT OF SCALA



**ADVANCING
ANALYTICS**

Anna-Maria Wykes
Data Engineering & Cloud Consultant

WHO AM I?

Senior Advancing Analytics Consultant

Data Engineering & Cloud

Over 14 years' experience working in Software & Data Engineering, most recently working with Scala, Kafka and various cloud tech

BSc in Multimedia Computing & Business, and a HND in Visual Communication



@annawykes



anna-maria-wykes-31939454

WHAT MAKES ME TICK?

Passion for Data and strive to bring the worlds of Software Development and Data Science closer together.


Helped to organize/run local Code Clubs

Organize and volunteer at local events


Other areas of interest include UX, and Agile methodologies






MEETUPS AND COMMUNITY GROUPS







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Subject Data: Bristol

 Bristol, United Kingdom
 1,532 members · Public group
 Organized by Subject D. and 5 others

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What we're about

Subject Data: Bristol has been formed to offer knowledge sharing and networking opportunities for data professionals, techies, researchers or simply those with an interest in data applications and technologies. We aim to provide an open, friendly environment in which everyone can participate, learn and share their knowledge and experience with presentations covering a wide range of topics.

So, whether, you're an administrator, developer, data scientist, analyst,...

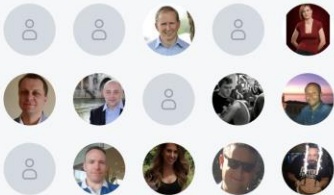
[Read more](#)

Organizers

 Subject D. and 5 others
[Message](#)

Members (1,532)

[See all](#)




Upcoming events (5)

[See all](#)

WED, MAR 18, 6:00 PM

APIs with AI, and Finance

 Just Eat



WHAT ARE
WE GOING
TO DO.....



databricks



Scala

WHY?



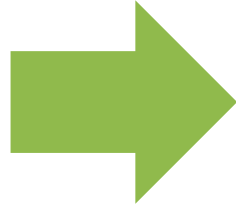


databricks



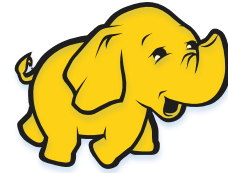
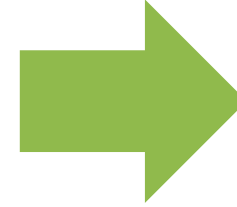
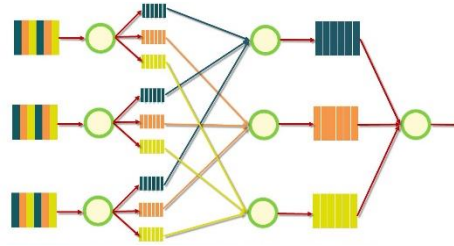
Google File System Papers
Released

2003



Google MapReduce Papers

2004



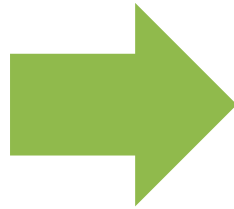
2006

Apache Hadoop project
created



Matei Zaharia starts Spark
project

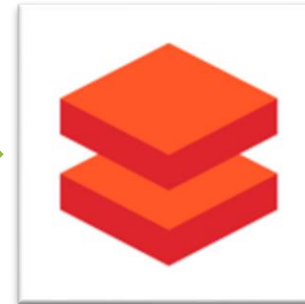
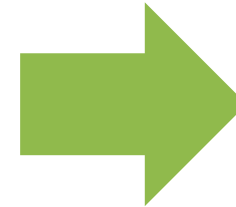
2010



THE
APACHETM
SOFTWARE FOUNDATION

Project donated to Apache
Foundation

2013



Databricks founded by
Matei

2013



Scala

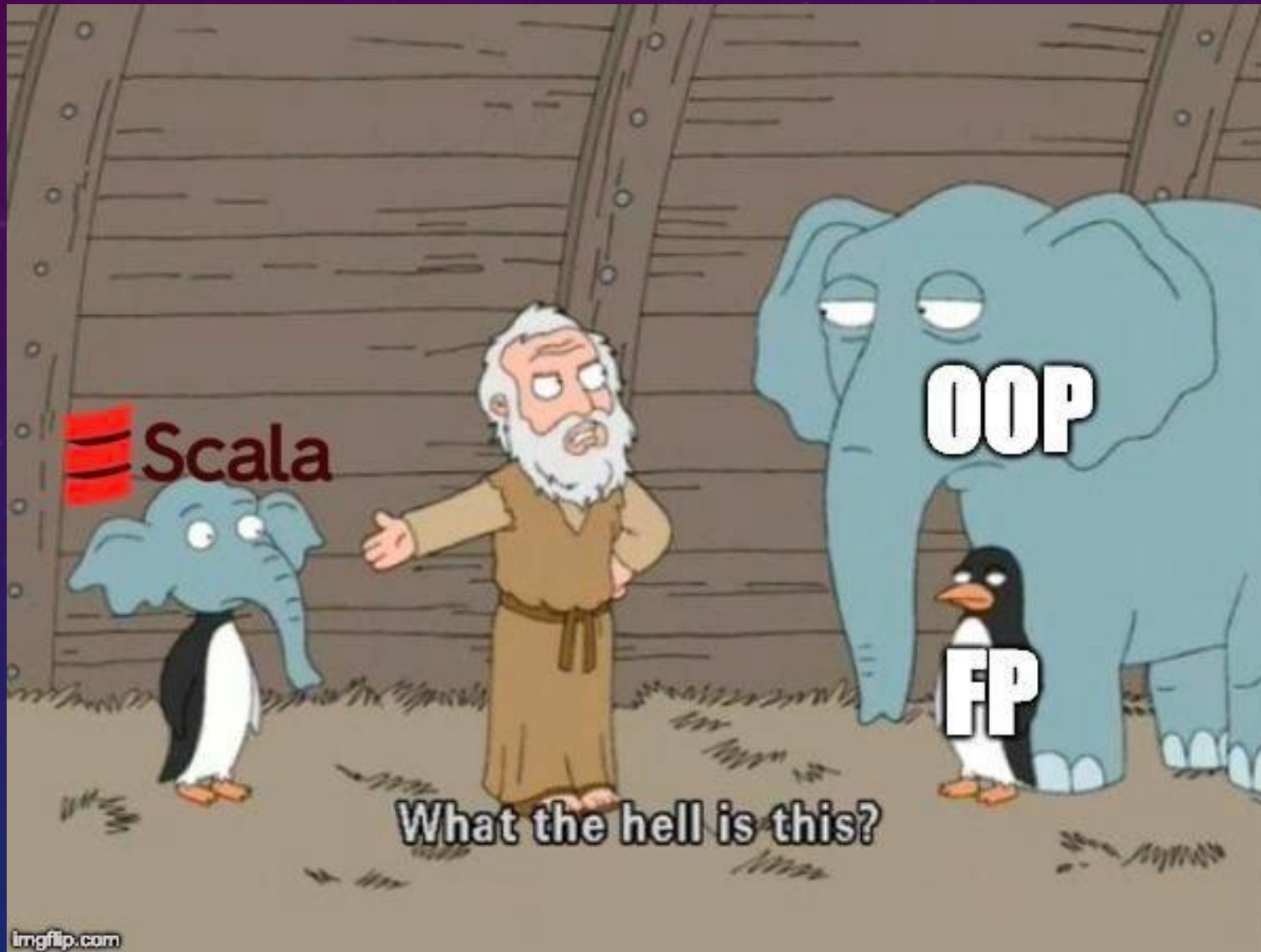
WHAT IS SCALA?

Object Orientated and **Functional** programming paradigms

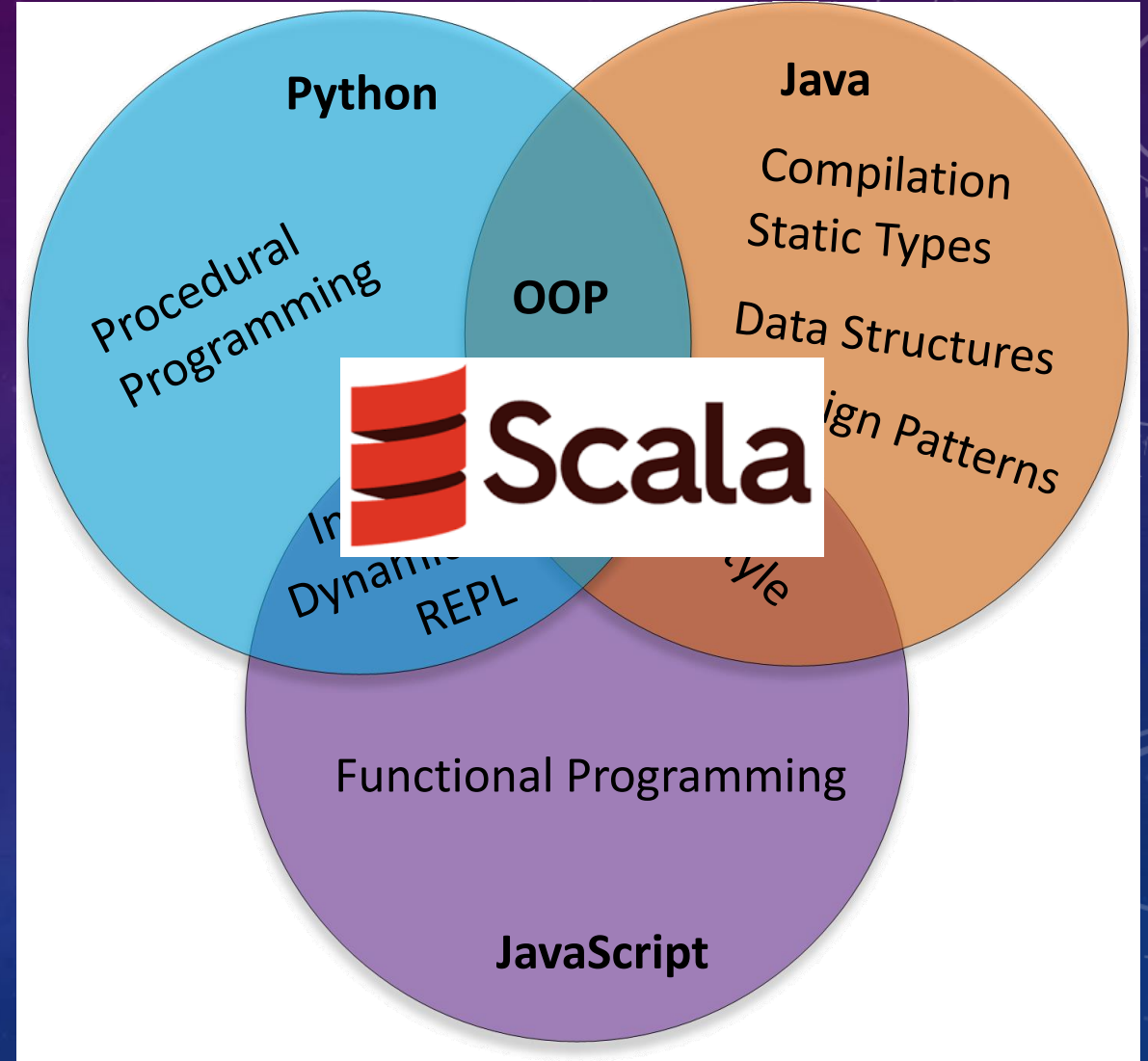
What is **Scala** used for? A lot of things, ranging from **Machine Learning** to **Web Apps**

The name Scala stands for “scalable language.” The language is so named because it was designed to grow with the demands of its users





THE ULTIMATE TEACHING LANGUAGE?



WHO USES SCALA

NETFLIX



SONY

SOFTWARE WRITTEN IN SCALA



BUT STILL, WHY
BOTHER....



Types safety means you can't turn a cat into a dog



BASICS OF SCALA

WHAT ARE WE GOING TO LOOK AT?



Case Classes



Option



Pattern matching



Map & FlatMap



Reduce and Filter



For Comprehensions

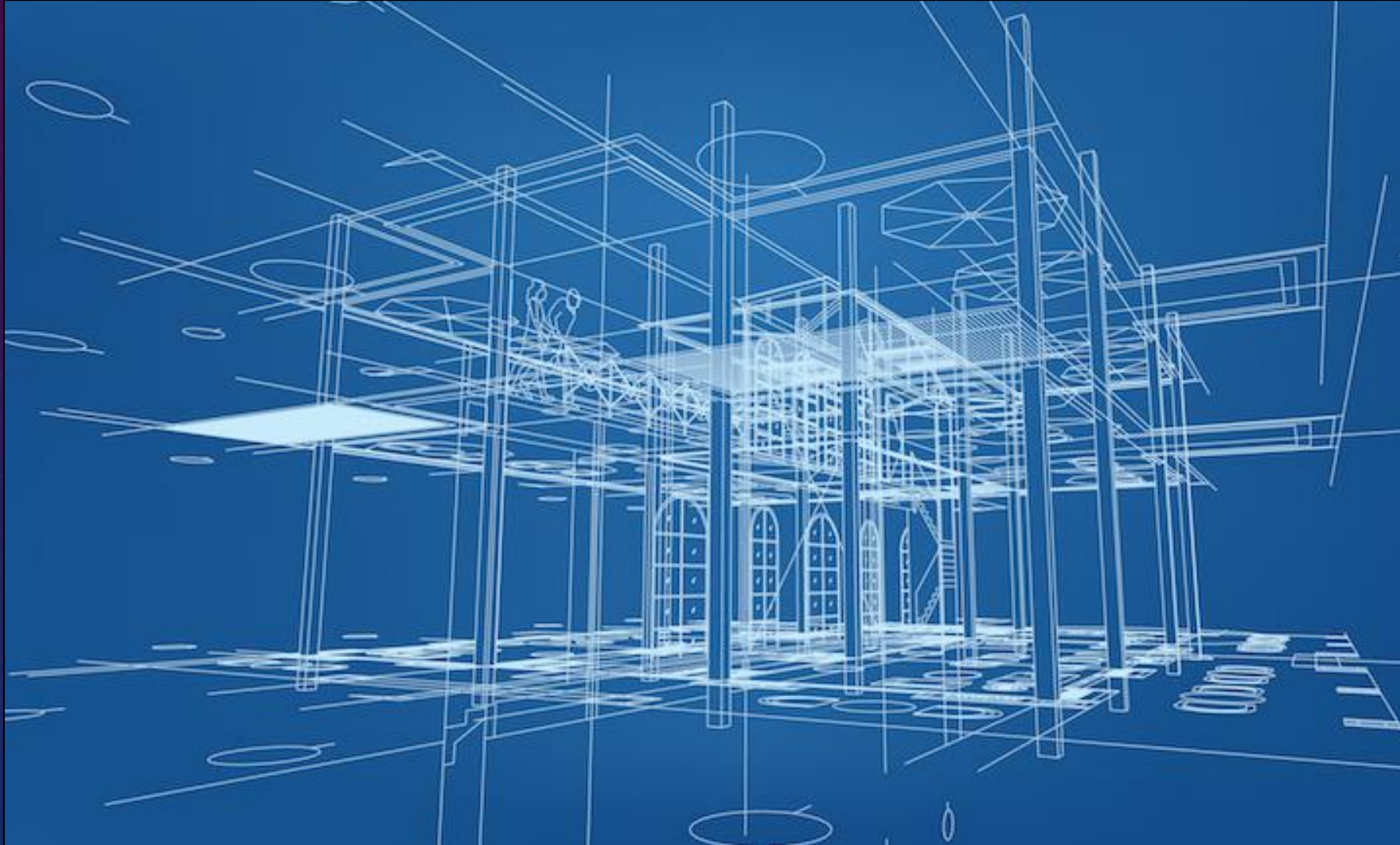
CODE DEMO'S



CASE CLASSES

Good for modelling immutable data Act like blueprints

CASE CLASSES



OPTIONS

Handles empty values without error

THE NULL MISTAKE

“I call it my billion-dollar mistake. It was the invention of the null reference in 1965” — Tony Hoare, 2009

HOW DOES SCALA HANDLE NULLS: OPTIONS

A **Scala Option** holds zero or one element of a type. This means that it is either a `Some[T]` or a `None` object. One place we get an **Option** value is through the `get()` method for a `Map`

SOME = Something

NONE = Nothing

MAP

Opens the box of data and transforms it accordingly

map explained with emoji 🤔

```
map([🐮, 🍠, 🐔, 🌽], cook)  
=> [🍔, 🍟, 🍗, 🍿]
```

FLATMAP

Opens the box of data, transforms it, and flattens it accordingly



When you forget to use flatmap

REDUCE AND FILTER

Sum everything up Only get the data you need

filter, and reduce explained with emoji 🤔

```
filter([🍔, 🍟, 🍗, 🍿], isVegetarian)  
=> [🍟, 🍿]
```

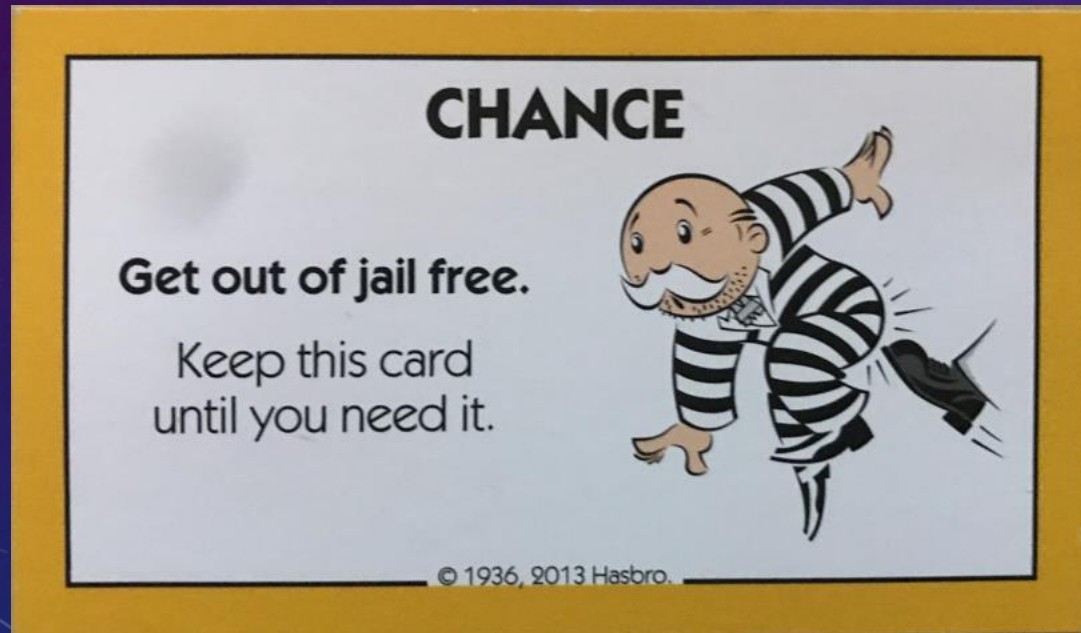
```
reduce([🍔, 🍟, 🍗, 🍿], eat)  
=> 💩
```

FOR COMPREHENSION

Monads

FUNCTIONAL PROGRAMMING: MONADS

A Monad is a sequence of events with a get out of jail card



Step One



Step Two



Step Three

SUMMARY

Gone over some of the basics

Apply these when working with Scala in Databricks

Be able to understand Maven and Spark packages

Robustly test code

Create a portable Jar

USEFUL LINKS

Learning

<https://www.scala-exercises.org/>

<https://scala.epfl.ch/>

<https://www.coursera.org/specializations/scala>

<https://typelevel.org/cats/>

<https://medium.com/disney-streaming/tagged/thisweekinscala>

Conferences

<https://scaladays.org/>

<https://scala.world/>

THANK YOU



<https://github.com/AnnaWykes/taking-the-scary-out-of-scala>



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