TAKING THE SCARY OUT OF SCALA

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?

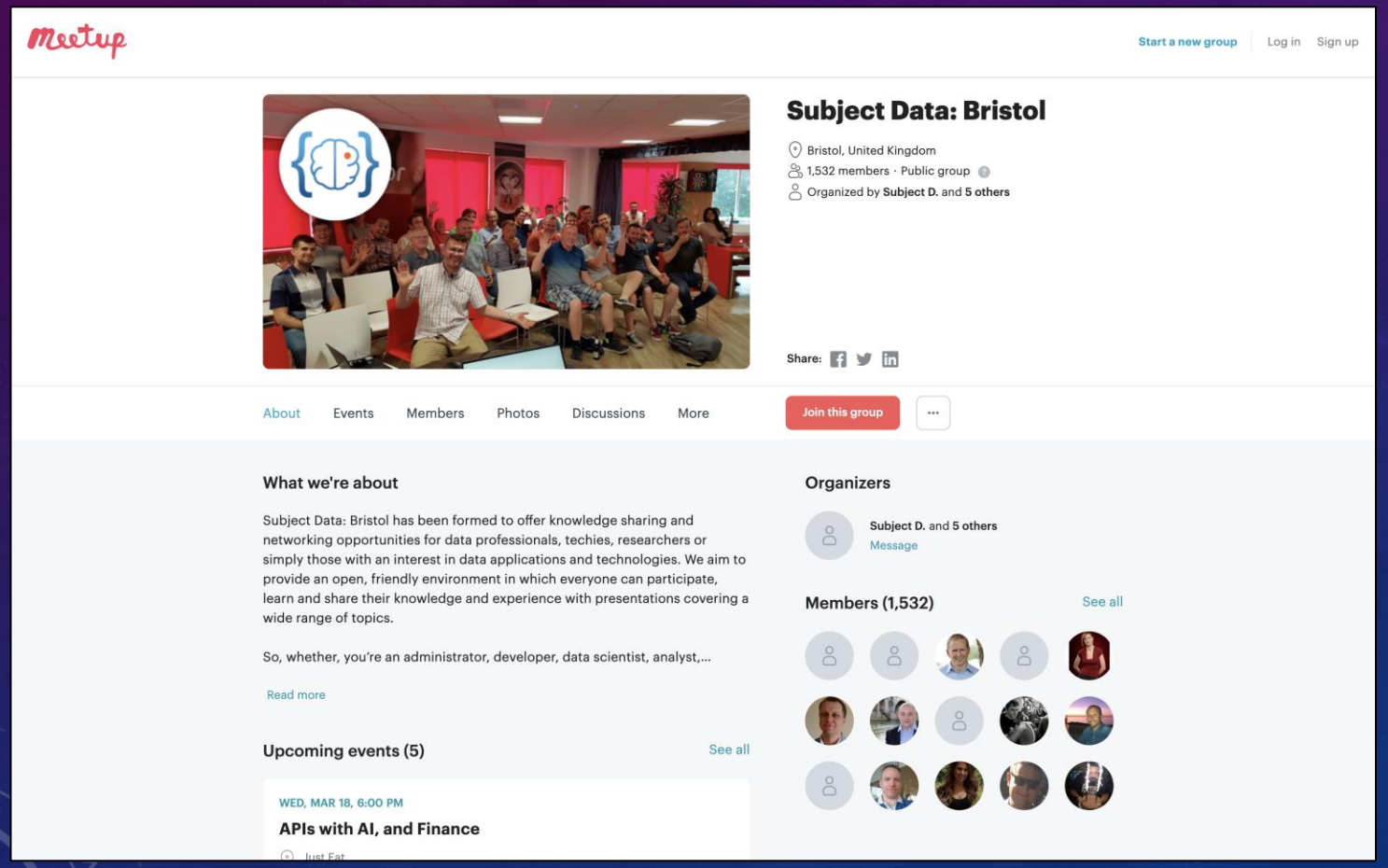
Passion for Data and strive to bring the worlds of Software Development and Data Science closer together.

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



WHAT ARE
WE GOING
TO DO.....

databricks

Scala

WHY?

databricks

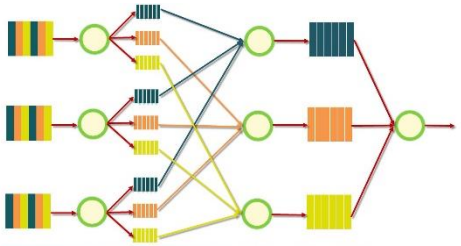
Google

Google File System Papers Released

2003

Google MapReduce Papers

2004



2006

Apache Hadoop project created

Matei Zaharia starts Spark project

2010

THE APACHE™ SOFTWARE FOUNDATION

Project donated to Apache Foundation

2013

Databricks founded by Matei

2013

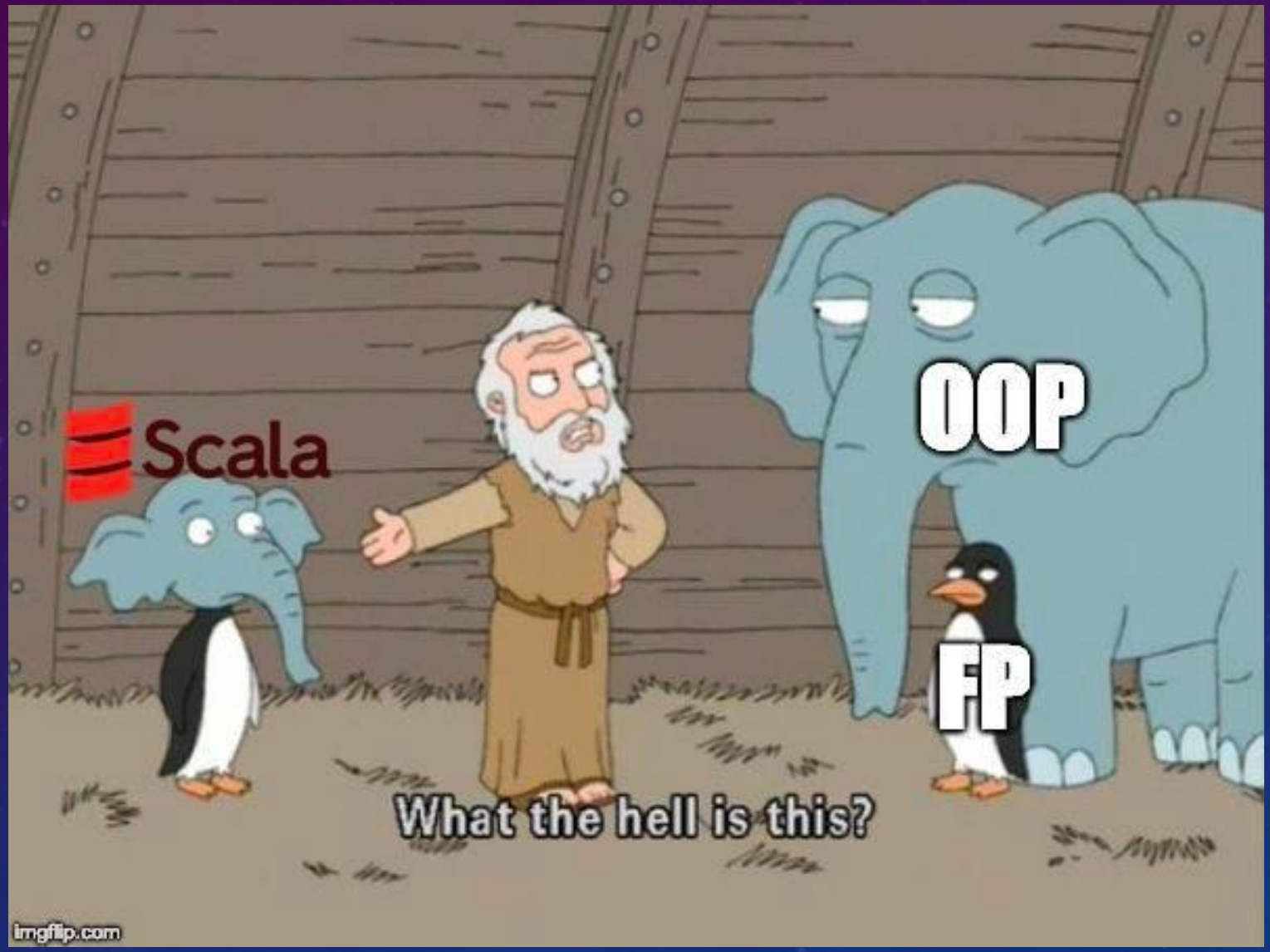

Scala

WHAT IS SCALA?

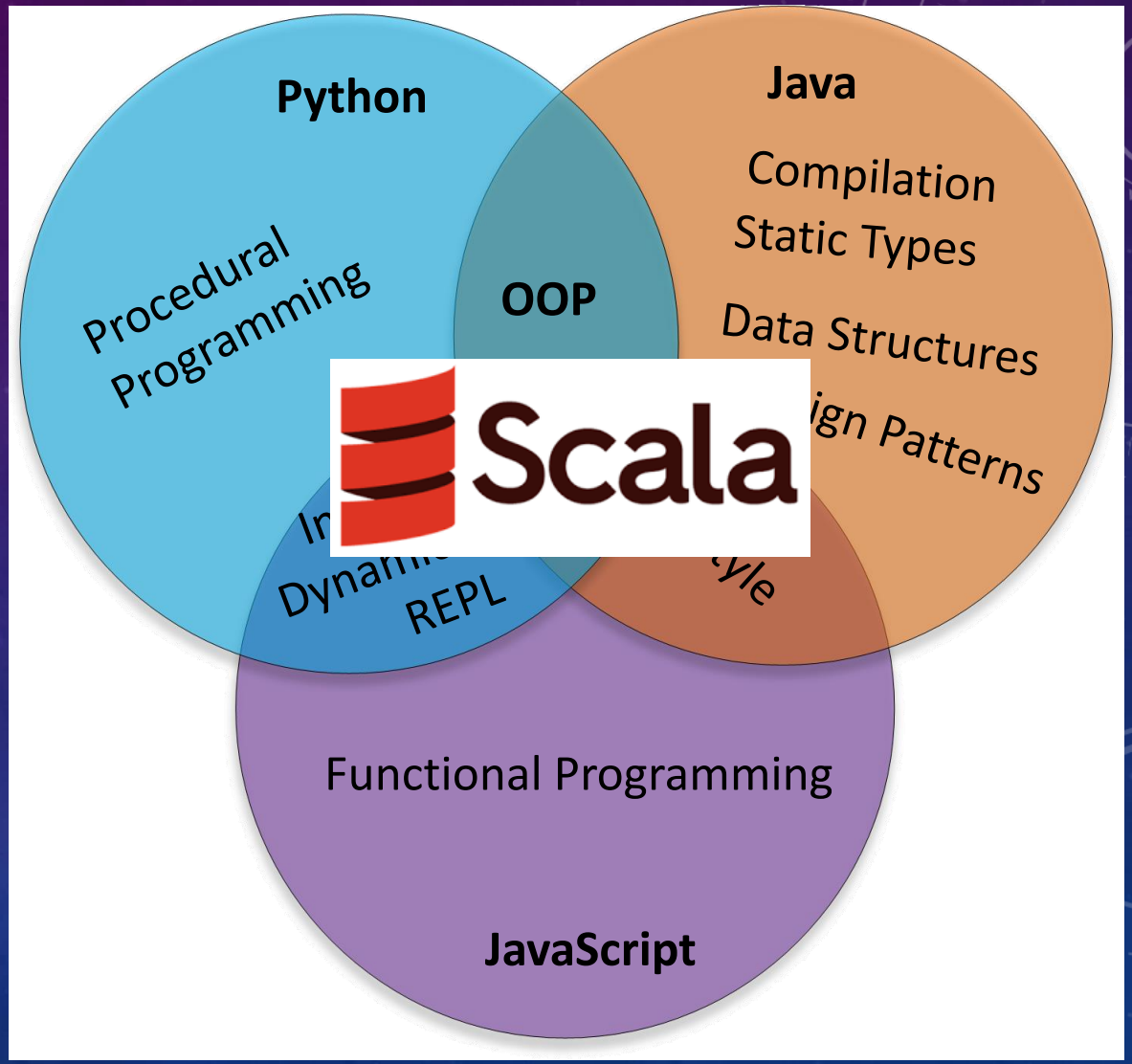
Object Orientated and **Functional** programming paradigms

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


Scala
OOP
FP
What the hell is this?
imgflip.com

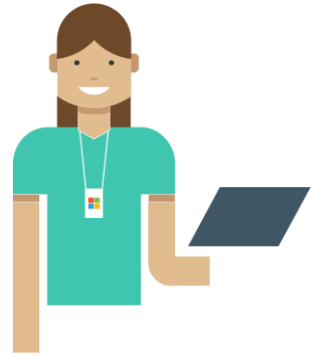
THE ULTIMATE TEACHING LANGUAGE?



WHO USES SCALA

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

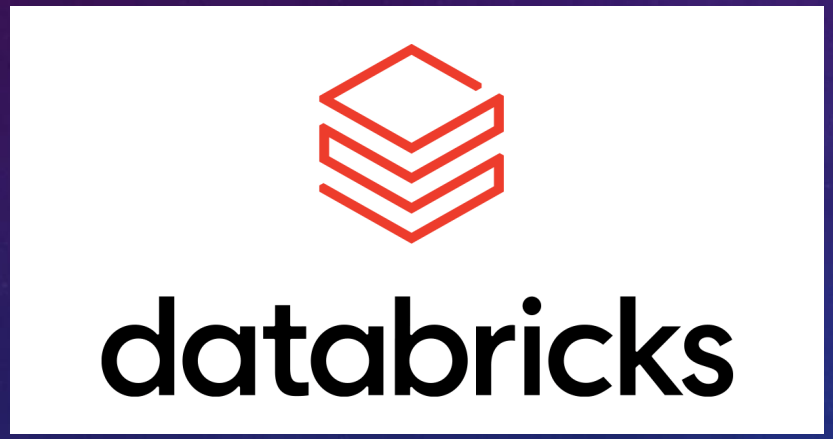
Pattern matching

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 😂

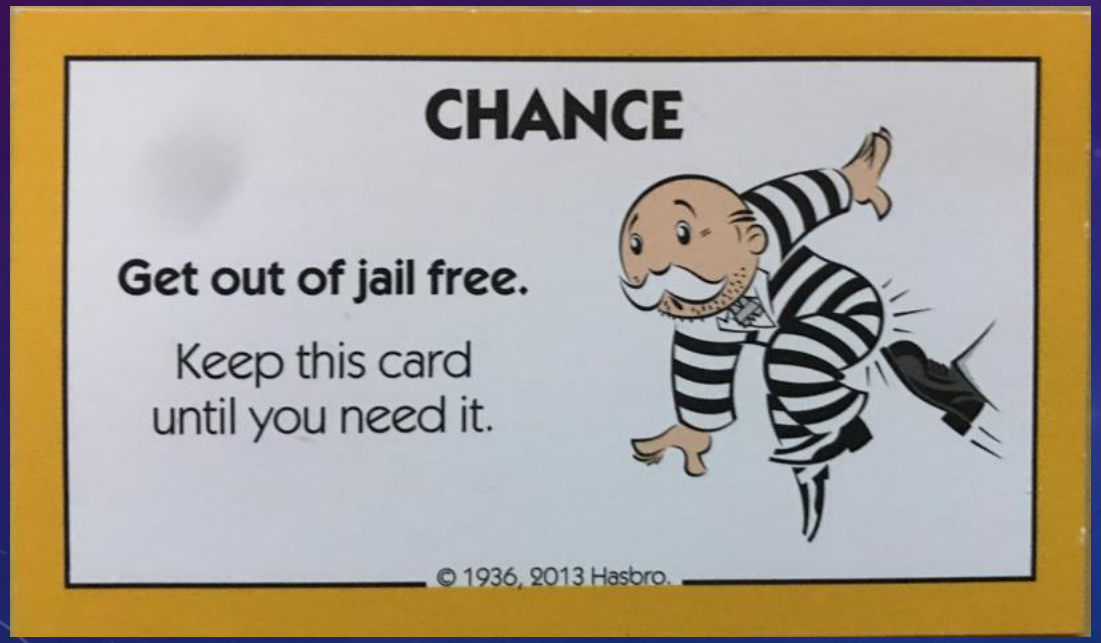
```
filter([🍔, 🍟, 🍗, 🍿], isVegetarian)
=> [🍟, 🍿]

reduce([🍔, 🍟, 🍗, 🍿], eat)
=> 💩
```

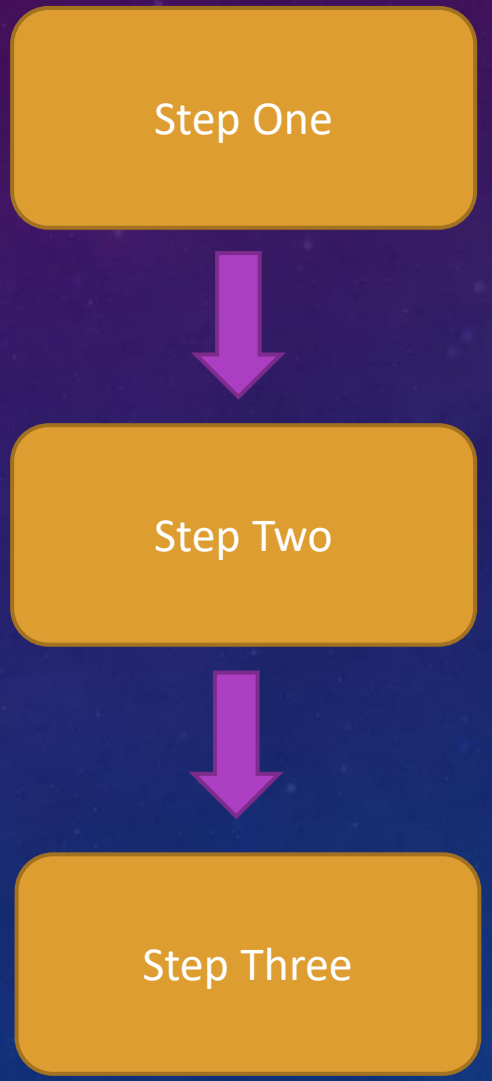
FOR COMPREHENSION

Monads

FUNCTIONAL PROGRAMMING: MONADS

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





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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