DOMAINMODEL.STREAM()

https://github.com/lesfurets/model-map

WELCOME TO THE FURETS !

@GDIGUGLI – GILLES DI GUGLIELMO

- Designer of sweet cooked software since 1999
- Software Architect at LesFurets.com

@M_GANDIN – MATHIEU GANDIN

- Ship code in production since 2000
- Tech lead at LesFurets.com

1 website, 5 Insurance Products : Car, Health, Home, Bike, Loan
1 codebase, 450k lines of code, 60k unit tests, 150 selenium tests

22 Developers, 2 DevOps, 3 Architects
19 production servers including Load balancers, Frontend, Backend, Databases, BI

1 release per day
7 years of code history

2.5M quotes/year, 31% of market share

MOVING THE ARCHITECTURE

WHAT YOU HAVE ...

Domain Entities JSON

Domain Entities Java Beans

Domain Relational Entities

Analytics Entities Java Beans

Analytics Relationa Entities

JavaScript Front App

JSON RPC

Front WebApp

ORM or SQL

Runtime DataBase

ORM or SQL

Batch ETL

ORM or SQL

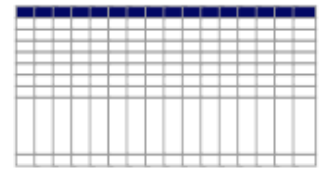
BackOffic DataBase

WHAT YOU WANT ...

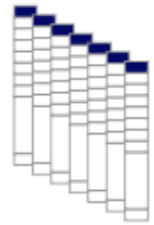
Key/Value
JSON
Dictionary

Domain Entities
Java Beans

Wide Columns
Model

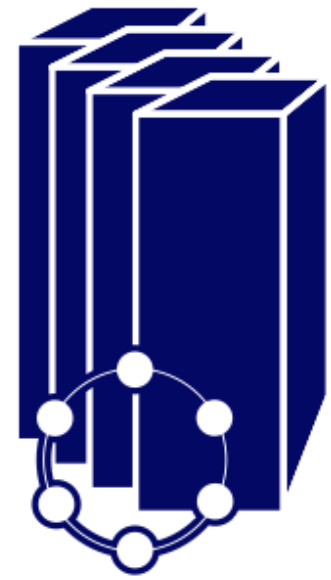


Analytics
Data Vecto



JavaScript
Front App

Front
WebApp

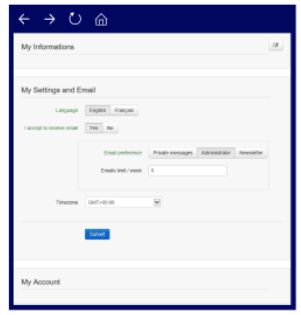


Cassandra
Cluster

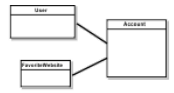
Data
Streaming
µ Batch

QUE FAIRE ?

ARCHITECT AT WORK ...

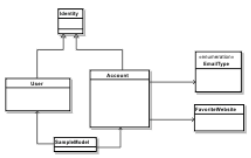


UI Forms

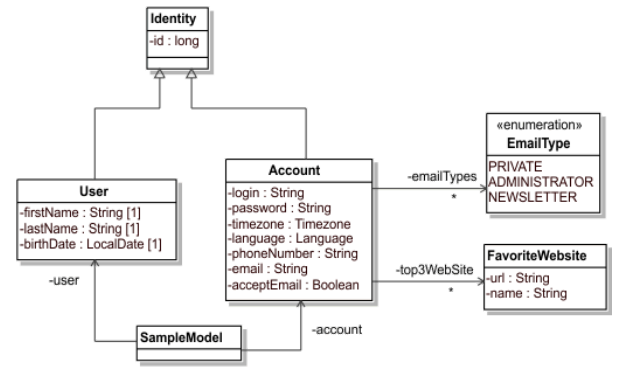


Domain
Relational
Entities

Analytics Entities
Java Beans



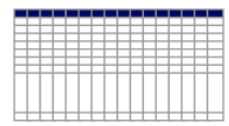
Domain Entities
JSON



Domain Model
Java Beans

Key/Value
JSON
Dictionary

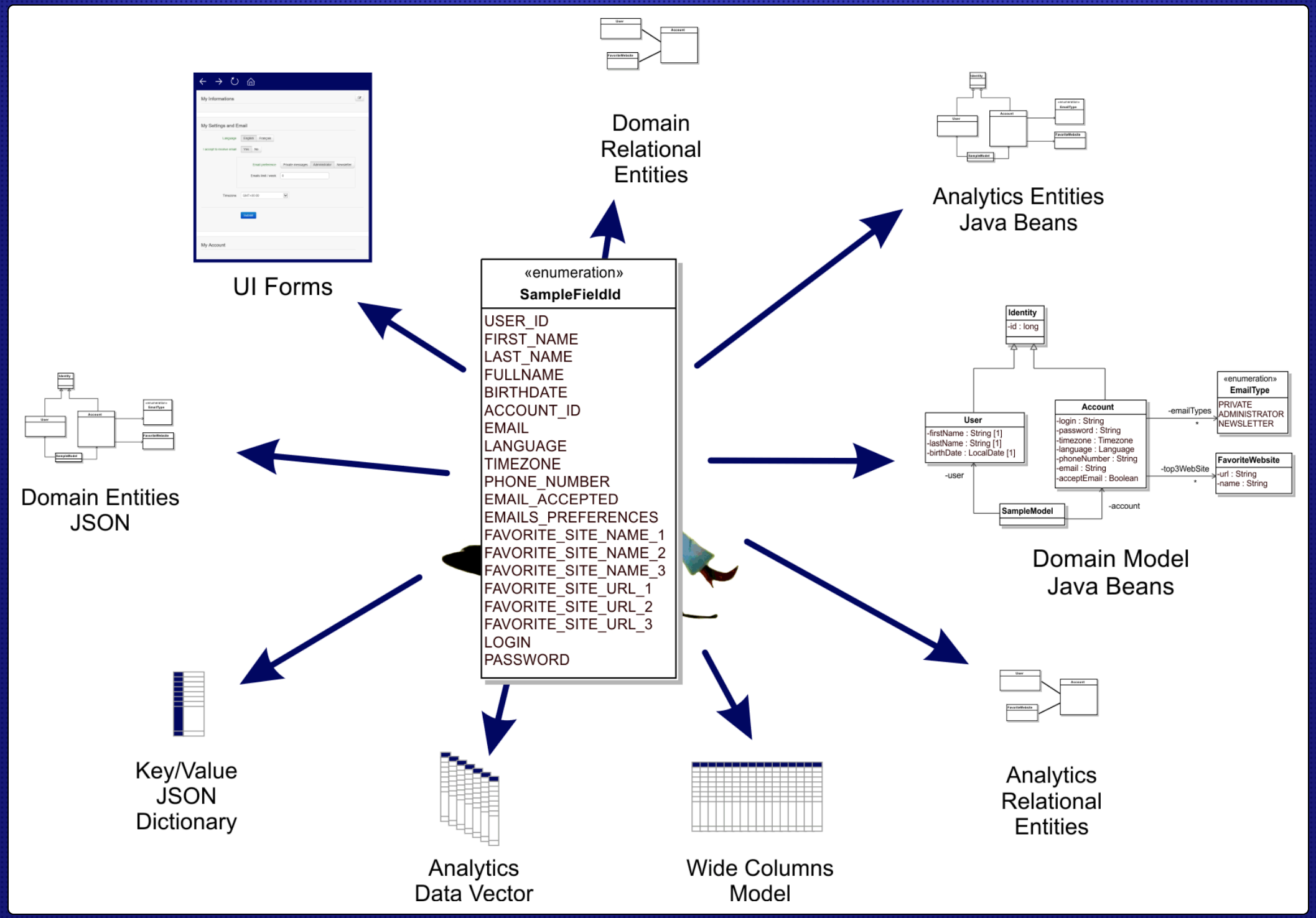
Analytics
Data Vector



Wide Columns
Model

Analytics
Relational
Entities

KEYING EVERYTHING !



A BIT OF LIVECODING

LIVE CODE 1 : INTRODUCTION TO KEY VALUE API

```
SampleModel model = new SampleModel();
model.setAccount(new Account());
model.getAccount().setEmail("parisjug@gmail.com");
System.out.println(model.getAccount().getEmail());

FieldModel fieldModel = new SampleModelWrapper(model);
System.out.println(fieldModel.<String> get(EMAIL));

fieldModel.set(EMAIL, "parisjug.gmail.com");
System.out.println(fieldModel.<String> get(EMAIL));
```

LIVE CODE 2 : MIXING WITH JAVA.UTIL.MAP

```
FieldModel model = SampleModels.wrapper();
System.out.println(model.<String> get(EMAIL));
model.stream().forEach(System.out::println);
Map<FieldId, Object> map = model.stream().collect(toMap(Entry::getKey, Entry::getValue));
System.out.println(map);
SampleModelWrapper newModel = map.entrySet().stream().collect(SampleModelWrapper.toFieldModel());
newModel.stream().forEach(System.out::println);
System.out.println(newModel.getModel().getAccount().getEmail());
```

LIVE CODE 3 : TAG FILTERING

```
FieldModel model = SampleModels.wrapper();
Map<FieldId, Object> map = model.stream().collect(toMap(Entry::getKey, Entry::getValue));
SampleModelWrapper newModel = map.entrySet().stream().filter(e -> e.getKey().hasTag(SampleTag.ACCOUNT))
                // .filter(e -> e.getKey().hasTag(SampleTag.USER))
                .collect(SampleModelWrapper.toFieldModel());
newModel.stream().forEach(System.out::println);
```

LIVE CODE 4 : GENERATE CQL

```
FieldModel model = SampleModels.wrapper();
Create create = SchemaBuilder.createTable("Field").addClusteringColumn(LOGIN.name(), text())
                .addPartitionKey("snapshot_id", timeuuid());

stream(model.getFieldInfos()).filter(f -> f.id() != LOGIN)
                .forEach(f -> create.addColumn(f.id().name(), cqlType(f)));

Create.Options createWithOptions = create.withOptions().clusteringOrder(LOGIN.name(), DESC);
System.out.println(createWithOptions);

Insert insert = QueryBuilder.insertInto("Field");
model.stream().forEach(e -> insert.value(e.getKey().name(), e.getValue()));

System.out.println(insert.getQueryString(codecRegistry()));
```

LIVE CODE 5 : DIFF TWO MODELS

```
FieldModel sample_1 = SampleModels.wrapper();
FieldModel sample_2 = SampleModels.wrapper();

sample_1.set(FAVORITE_SITE_NAME_3, null);
sample_1.set(FAVORITE_SITE_URL_3, null);
sample_2.set(FAVORITE_SITE_NAME_1, "LesFurets.com");
sample_2.set(FAVORITE_SITE_URL_1, "www.lesfurets.com");
sample_2.set(EMAILS_PREFERENCES, Collections.emptyList());

/* stream all key-values pair from both models */
Stream.concat(sample_1.stream().map(buildRight), sample_2.stream().map(buildLeft))

                /* merging key-value pair in a map */
                .collect(Collectors.toMap(Triple::getMiddle, Function.identity(), merge))

                /* filter to keep only key with 2 differents values */
                .values().stream().filter(isNotSame)

                /* print keys with differents values */
                .forEach(System.out::println);
```

WE NEED A NEW NAME ?

- Model-Map is cool, keep it
- YAMF: Yet Another Mapping Framework
- OWKF: Obi Wan Kenobi Framework
- Submit your ideas

MODEL-MAP AVAILABLE ON GITHUB

- http://github.com/lesfurets/model-map
- Framework and examples

- Apache Licence
- Try it and contribute !

THANK YOU!