Works in Progress

Mortgage-Backed Securities and a FastScore SDK in R

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An R SDK package: **fastscore**

- swagger-codegen + FastScore API specs = R package **swagger**
- Chris + lots of help + many hours = R package **fastscore**
  - **fastscore** classes inherit **swagger** classes
  - FastScore changes $\rightarrow$ R-SDK still works!
- Create the R client, connect API, Model Manage API, ...

```
> api <- InstanceBase$new(basePath = "https://localhost:15080")
> con <- fastscore::Connect$new(apiClient = api)
> mod_man <- fastscore::ModelManage$new(apiClient = api)

> mod_man$model_list(instance = "model-manage-1")$content
[1] "auto_gbm"    "hello-world"

> mod_man$stream_list(instance = "model-manage-1")$content
[1] "demo-1"   "demo-2"   "gbm-in"   "gbm-out"  "rest-in"  "rest-out"
```

R-SDK in Action

FastScore has swagger!

4 assets $\times$ 4 verbs:

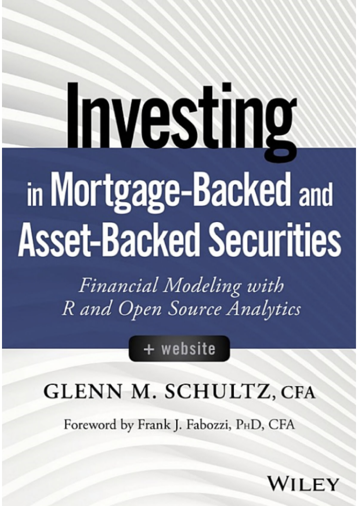
- model / schema / sensor / stream $\times$ list / get / add / delete

```
> mod_man
<ModelManage>
  Inherits from: <ModelManageApi>
  Public:
    model_list: function (instance, return, ...)
    ...
    schema_get: function (instance, schema, ...)
    ...
    active_sensor_attach: function (instance, desc, ...)
    ...
    stream_delete: function (instance, stream, ...)
    ...
    ...
```

Next up, `Engine`...

Mortgage-Backed Securities

- Some light reading...



A few vocabulary words...

- Pools, deals, groups, and loans
- Borrower, servicer, investor
- Scheduled/actual: balance, interest, principal
- Maturity, delinquency, exception codes
- Weighted Average Coupon (WAC)
- Constant Prepayment Rate (CPR)
- Constant Default Rates (CDR)
- Severity

Mortgage-Backed Securities
R and Python

- CoreLogic
  - Data retrieval, parsing, wrangling, formatting
- Sumit's `mtgexample.py`
  - R version $\rightarrow$ `mtgexample.R`
  - Summary document
- **Cashflow metrics**
  - Performing balance, WAC, CDR, CPR, severity

A Picture is Worth 1000 Words

4000 Words