

EXOVE

CACHING IN BACKBONE.JS APPLICATIONS

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Project

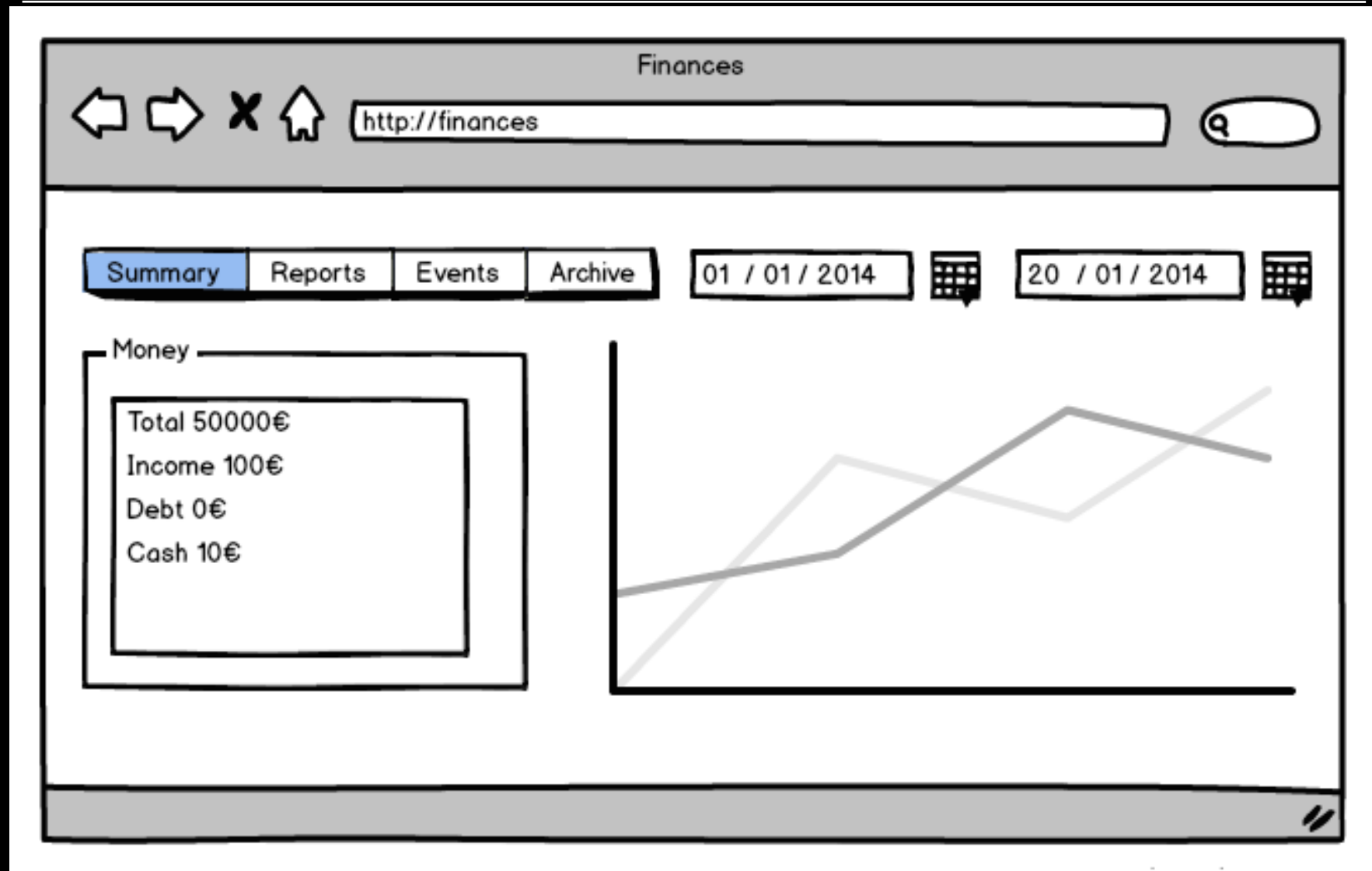
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- Financial company
- Personal reports

- Backbone.js
- Marionette.js
- Symfony2

Project wireframe

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Project structure

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- Tabs
- Each tab has a view
- Each view can consists of few subviews
- Each view or subview collects data from different AJAX requests
- AJAX requests can be the same for different views
- Time pickers – requests are time dependent

Project AJAX request

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- Financial data related to customer
- Few AJAX request sometimes have to be requested at the same time to calculate financial results
- Big bunch of data

Problems

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- Browser freezes
- Loading of data takes too long
- Data is private

Big data

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- Up to few megabytes (not compressed) per request
- Freezing browser
- Time to download data
- How to solve issue?

Create application state

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- Variable of current state:
- Views
- Collections
- Models
- Related extended objects
- Preloaded templates

Cache requests by URL

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- Backbone-fetch-cache
- Rewriting default fetch method
- Saves data temporary or permanently to memory or to localStorage
- Loads data fast, but this means loading it almost at the same time - freezing browser
- <https://github.com/madglory/backbone-fetch-cache>

Avoid race conditions

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- Race conditions and sessions (<http://thwartedefforts.org/2006/11/11/race-conditions-with-ajax-and-php-sessions/>)
- Avoid sessions in AJAX (`session_write_close`)
- Sessions to database
- Caching on server side
- Gzip

Avoid duplicated requests EXOVE

- Request to same URL at the same time
- Create wrapper for AJAX requests – checking if this url already requested in this moment
- Check jQuery deferred statuses

Bootstrap the models

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- Preloading data in HTML javascript tag
- Especially for data needed for other models before start
- <http://backbone.js/#FAQ-bootstrap>

Browser performance

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- Browser freezes on setting of big data
- Do not forget that not everyone uses fast enough Chrome
- Improving templates, collections and views

Templates

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- Big and complicated template with complicated logic is evil
- Divide templates in few
- Reduce complexity of logic (move it to JS)
- Reduce data size

- Reset vs. add vs. set
- Method set performs a "smart" update of the collection with the passed list of models. If a model in the list isn't yet in the collection it will be added
- Add adds a model to an existing collection of models, preserving any model already in the collection, not full collection at once like reset
- <http://jsperf.com/backbone-js-set-vs-reset>

- Zombie views
- Switching between tabs - multiple views, multiple events
- Global views on level of application
- <http://lostechies.com/derickbailey/2011/09/15/zombies-run-managing-page-transitions-in-backbone-apps/>

Security

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- Data is private
- Push cleaning with user prompt or without
- Everything is cached. Easy to clean it

Cleaning data

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- Cleaning before logout
- Emptying fetch-cache
- Emptying models
- Inactivity timer
- Catching 401 in AJAX, reloading

Conclusion

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- Avoid calculations in Backbone.js
- Move logic to backend
- Avoid loading big data
- Cache, cache and cache

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THANK YOU!

QUESTIONS?