

Tape Framework

Less random stuff in random places

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Tape Modules

- (Ported to cljc from Duct-Framework)
- The configuration is initiated twice:
 - first, into an intermediate configuration,
 - which in turn: is initiated into the system.



Figure: Modules

Components: two types

- Module components (type 1):
 - initialize into functions that
 - merge data into the system config map.
- Module components are mostly:
 - Controller modules: add Re-Frame function components.
 - View modules: add Reagent view function components.
- System components (type 2): whatever else, but mostly:
 - Re-Frame registerable functions and
 - Reagent view functions.

Init process

- Read module config edn.
- Prep module config into system config.
- Init system.

```
{:tape.mvc/module nil  
 :tape.toasts.controller/module nil  
 ...}
```

Figure: resources/myapp/config.edn

```
(def module-conf (m/read-config "myapp/config.edn"))  
(def system-conf (m/prepare-config module-conf))  
(def system (ig/init system-conf))
```

Figure: src/myapp/core.clj

Re-Frame Globals

- Re-Frame chose globals for a simpler API.

```
(ns my.app.p.controller)
```

```
(rf/reg-event-db ::index  
  (fn [db _]  
    {::people (...)}))
```

Figure: Re-Frame plain

```
(ns my.app.people.view)
```

```
(defn index []  
  (for [person people]  
    [:p person]))
```

Figure: Reagent plain

Use Integrant

- Use Integrant to do away with globals.
- (Re-)**Frame** registration done by a separate Integrant component.

```
(ns my.app.p.controller)

(defmethod ig/init-key
  ::index [_ _]
  (fn [db _]
    {::people (...)}
    ::filtered false)))
```

Figure: Re-Frame Integrant

```
(ns my.app.people.view)

(defmethod ig/init-key
  ::index [_ _]
  (fn []
    (for [person people]
      [:p person])))
```

Figure: Reagent Integrant

Automate use Integrant

- Start with plain functions.
- Leverage Integrant keys inheritance.

```
(ns my.app.p.controller)
```

```
(defn index [db _]  
  {::people (...)  
   ::filtered false})
```

```
(derive ::index  
        :tape/const)
```

Figure: Re-Frame Integrant

```
(ns my.app.people.view)
```

```
(defn index []  
  (for [person people]  
        [:p person]))
```

```
(derive ::index  
        :tape/const)
```

Figure: Reagent plain

Use Modules

- Modules are buckets of handlers, subscriptions, view functions.

```
(defmethod ig/init-key
  ::module [_ _]
  (fn [config]
    (merge config
      {::index index}))))
```

Figure: Controller module

```
(defmethod ig/init-key
  ::module [_ _]
  (fn [config]
    (merge config
      {::index index}))))
```

Figure: View module

Automate use Modules

- Have to annotate functions with metadata.
- **mvc/defm**:
 - inspects the namespace,
 - expands into modules above.

```
(mvc/defm :: module)
```

Figure: Controller module

```
(mvc/defm :: module)
```

Figure: View module

```
(defmethod ig/init-key :tape/const [_ v] v)
```

Figure: Note

Gist: the right thing is sugar for the left thing

```
(ns my.app.p.controller)
```

```
(defmethod ig/init-key
  ::index [_ _]
  (fn [db _]
    {::people (...)})))
```

```
(derive ::index
        ::mvc/event-db)
(defmethod ig/init-key
  ::module [_ _]
  (fn [config]
    (merge config
      {::index nil}))))
```

```
(ns my.app.p.controller)
```

```
(defn index
  {::mvc/reg ::mvc/event-db}
  [db _]
  {::people (...)}))
```

```
(mvc/defm ::module)
```

Leverage Intuitions

- **MVC** is well understood, let's use it in naming.
 - Controller: Re-Frame stuff.
 - View: Reagent stuff.
 - Model: whatever.
- An **App** is multiple MVC triples.

Leverage Metadata

- Annotate functions, conveys what they **are**.
- Automate module definition via **defmodule**.

```
(ns my.app.people.controller)

(defn show
  {::mvc/reg ::mvc/event-db}
  [db _] {::person (...)}))

(defn person
  {::mvc/reg ::mvc/sub}
  [db _] (::person db))

(mvc/defm ::module)
```

Figure: Controller module

```
(ns my.app.people.view)

(defn show
  {::mvc/reg ::mvc/view}
  [])
  (let [person
        @(v/subscribe
           people.c/person))]
    [:p person]))

(mvc/defm ::module)
```

Figure: View module

Module discovery

- Requiring each view and controller module is tedious.
- “Module discovery” finds them by name pattern.

```
(mvc/require-modules "src/myapp/app")  
;; (require '[myapp.app.this.view])  
;; (require '[myapp.app.that.controller])  
  
(def config ;; modules system config map  
  (merge  
    (mvc/modules-map "src/myapp/app")  
    (module/read-config "myapp/config.edn")))
```

Consistent Naming

- Force: event names to be namespaced (by real, existing namespaces).
- Force: handlers names to match event names.
- If a view is rendered as a result of an event handler executing, their names should match.

```
:my.app.people.controller/index ;; event  
my.app.people.controller/index  ;; handler  
my.app.people.view/index        ;; view
```

Make calls navigable

- Event dispatches bear some analogy to function calls.
- They should be navigable as well (“jump to definition”).
- tools/subscribe & tools/dispatch are macros:
 - use handler & subscription symbols,
 - macroexpand to normal Re-Frame.

```
(mvc/dispatch  
  [people.c/index])
```

;; becomes

```
(rf/dispatch  
  [: : people.c/index])
```

Figure: Dispatch

```
(mvc/subscribe  
  [people.c/person])
```

;; becomes

```
(rf/subscribe  
  [: : people.c/person])
```

Figure: Subscribe

Links

`https://github.com/tape-framework`