FIREBASE

FIREBASE
WHAT IS FIREBASE [5]

“Firebase is a platform developed by Google for creating mobile and web applications.”

[5] https://en.wikipedia.org/wiki/Firebase

FIREBASE
WHAT IS FIREBASE

» set of tools to develop applications

» apps can be created without server side code

» "Backend as a service"

FIREBASE TOOLS

- Analytics
- Authentication
- Database
- Messaging
- Hosting
- File Storage
- ...

DEPLOYING APPLICATIONS

DEPLOYING APPLICATIONS

» Firebase hosting makes it easy to deploy web-apps

» execute firebase deploy

» or add deploy script to package.json

```
{
  "scripts": {
    // ... other scripts
    "deploy": "npm run build:app && firebase deploy"
  }
}
```

FIREBASE REALTIME DATABASE

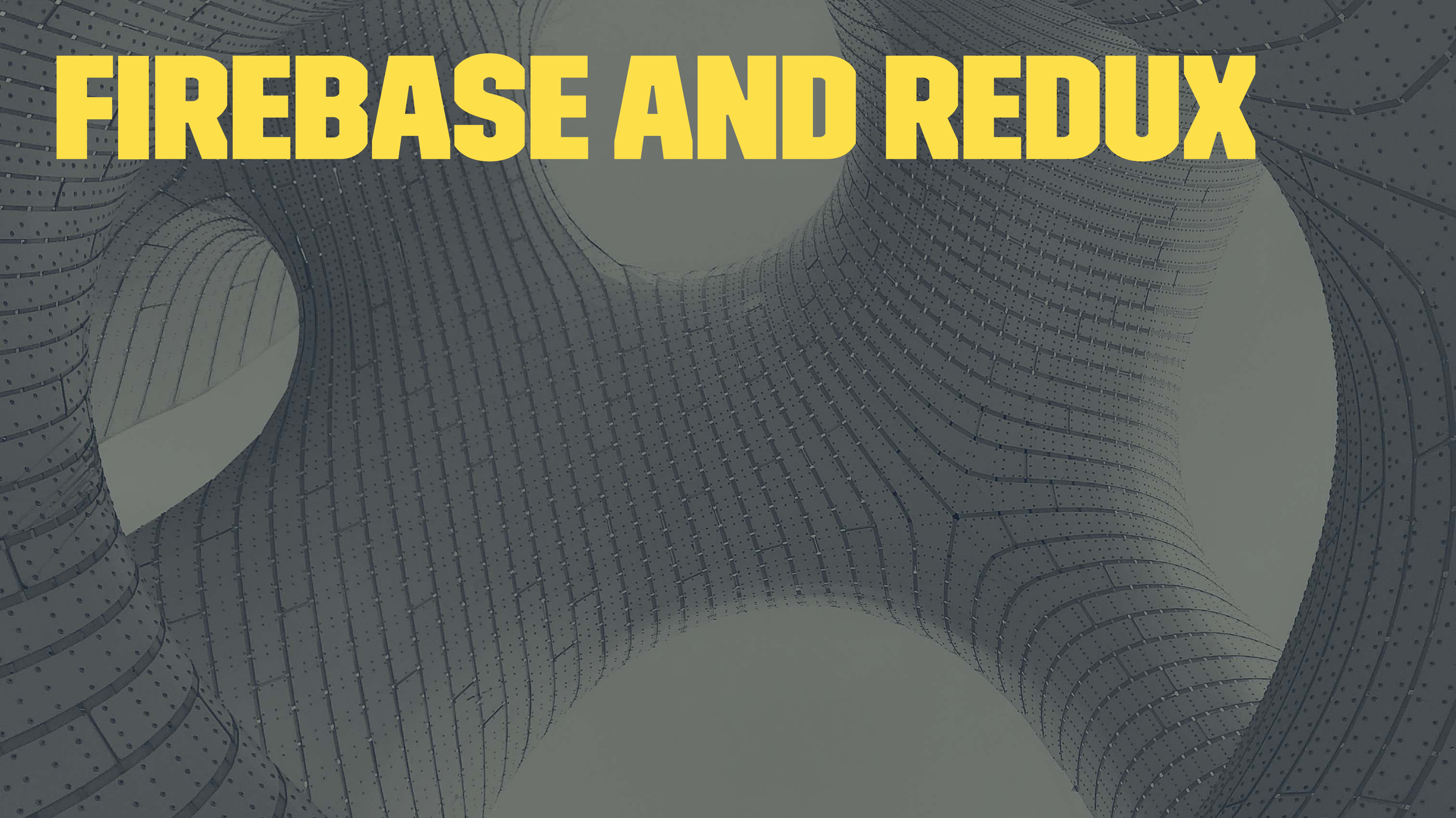
» NoSQL store

» can sync data with devices automatically

» supports authorization via database rules

» ...

FIREBASE AND REDUX



FIREBASE AND REDUX

» React-Redux-Firebase library

» reduces boilerplate when working with firebase

  » provides automatic reducers

  » provides watch query capabilities

  » ...

```
npm install --save react-redux-firebase
```

SETUP LOCAL DATABASE

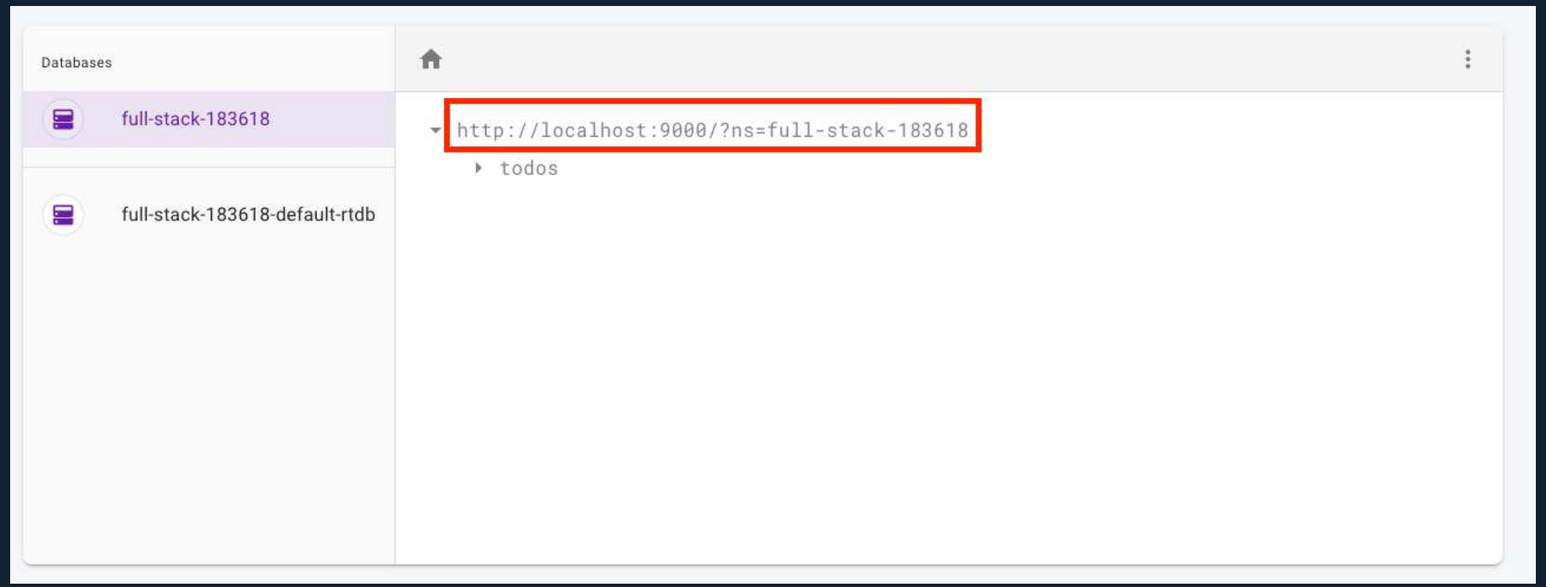
```
// firebase.js

import firebase from 'firebase'
import 'firebase/auth'
import 'firebase/database'
//       ^^^^^^^^^^^^^^^^^^
// add firebase database
// ...
```

SETUP LOCAL DATABASE

» Goto http://localhost:4000

» Select Realtime Database emulator

» Copy Database URL



SETUP LOCAL DATABASE

» Paste URL in ./firebase.json

» Please see firebase.js [6]

[6] full example https://gist.github.com/webpapaya/91fd607872e10b3f0a854e95582dfc76

SETUP REDUX FIREBASE

```
// index.js

import App from './App'
import { ReactReduxFirebaseProvider } from 'react-redux-firebase'
import { firebase } from './firebase'
// import firebase and the ReactReduxFirebaseProvided

const rrfProps = {
  firebase,
  config: { userProfile: 'users' },
  dispatch: store.dispatch
}
// setup config
```

USE REACTREDUXFIREBASEPROVIDER [1]

```
// index.js
const rrfProps = { /* ... config*/ }

ReactDOM.render(
  <Provider store={store}>
    <ReactReduxFirebaseProvider {...rrfProps}>
      <!-- use the firebase provider -->
      <App />
    </ReactReduxFirebaseProvider>
  </Provider>,
  document.getElementById('root')
)
```

[1] full example https://gist.github.com/webpapaya/91fd607872e10b3f0a854e95582dfc76#file-index-js

ADD THE FIREBASE REDUCER [2]

```
// reducers/index.js
import { firebaseReducer } from 'react-redux-firebase'

const rootReducer = combineReducers({
  firebase: firebaseReducer,
  // ... other reducers
})
```

[2] full example https://gist.github.com/webpapaya/91fd607872e10b3f0a854e95582dfc76#file-reducer-js

ADD FIREBASE TO ACTION CREATORS [3]

```
import { getFirebase } from 'react-redux-firebase'

const store = createStore(
  rootReducer,
  compose(
    applyMiddleware(thunk.withExtraArgument({ getFirebase })),
    //                                      ^^^^^^^^^^^^
    // each action creator can access firebase now
    // ...
```

[3] full example https://gist.github.com/webpapaya/91fd607872e10b3f0a854e95582dfc76#file-store-js

ADAPTING ACTION CREATORS
FETCHING DATA ONCE [4]

```
export const fetchUsersActionCreator = () => async (dispatch, _, { getFirebase }) => {
  //                                                 ^^^^^^^^^^^^
  // firebase can be used in any action creator now
  await getFirebase().promiseEvents([
    { path: 'users' }
  ])
  // no actions need to be dispatched as firebase automatically dispatches actions
}
```

[4] we'll se an alternative approach later

ADAPTING ACTION CREATORS
FETCHING DATA ONCE

```
export const createUsersActionCreator = ({ username }) => async (dispatch, _, { getFirebase }) => {
  await getFirebase()
    .ref('users')
    //   ^^^^^^^
    // the path under which the record should be stored
    .push({ username })
    //      ^^^^^^^^
    // the payload to be persisted in firebase
}
```

ADAPTING ACTION CREATORS
SUBSCRIBE TO LIVE DATA

```
import { compose } from 'redux'
import { connect } from 'react-redux'
import { firebaseConnect } from 'react-redux-firebase'
const mapStateToProps = (state, props) => {
  return {
    moneyTransactions: state.firebase.ordered.moneyTransactions
//                     ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
// access locally cached money transactions from firebase
  }
}

export default compose(
  firebaseConnect([ 'moneyTransactions' ]),
// ^^^^^^^^^^^^^^
// automatically receive live updates
  connect(mapStateToProps)
)(MoneyTransaction)
```

FIREBASE

- there are lots of other things to discover in firebase
  - authorization of data (via database rules)
  - ...
- we'll look into necessary features for your MMP when required

FINAL TASK OF THE SEMESTER 😢

- » fetch money-transactions via firebase
  - » adapt action creator
  - » adapt mapStateToProps
- » create money-transactions via firebase
- » afterwards we'll discuss the MMP

FEEDBACK

» Questions: tmayrhofer.lba@fh-salzburg.ac.at

» https://de.surveymonkey.com/r/8TW92LL