Firebase Tech Talk

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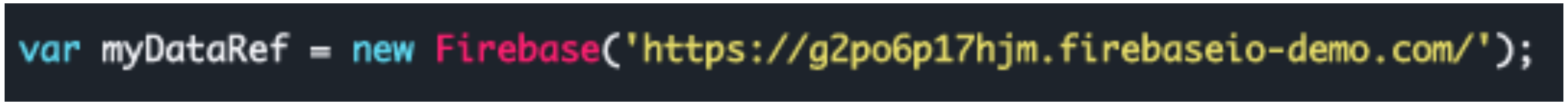
Firebase

- Real-time database
- Store & sync JSON format data between clients
- Native clients for Javascript, iOS, Android

- Can build client apps with realtime multi-user interactions with no backend

Demo of Firebase Console

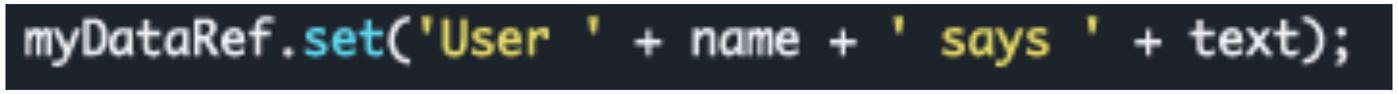
Create a reference



```
var myDataRef = new Firebase('https://g2po6p17hjm.firebaseio-demo.com/');
```

Adapted from official Firebase tutorial

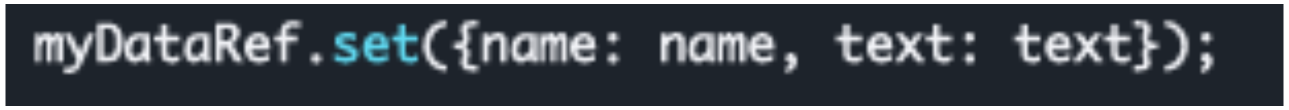
Write data



```
myDataRef.set('User ' + name + ' says ' + text);
```

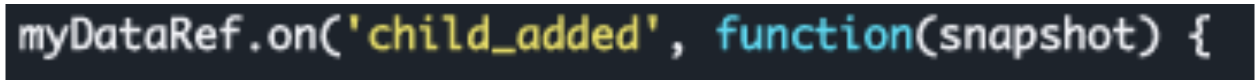
Replaces myDataRef location with specified data

Write objects

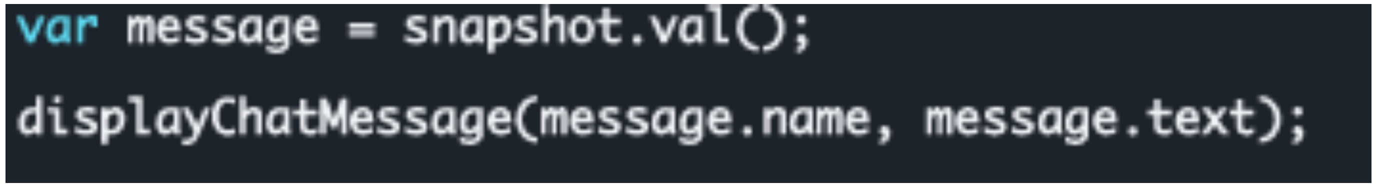


```
myDataRef.set({name: name, text: text});
```

Read data

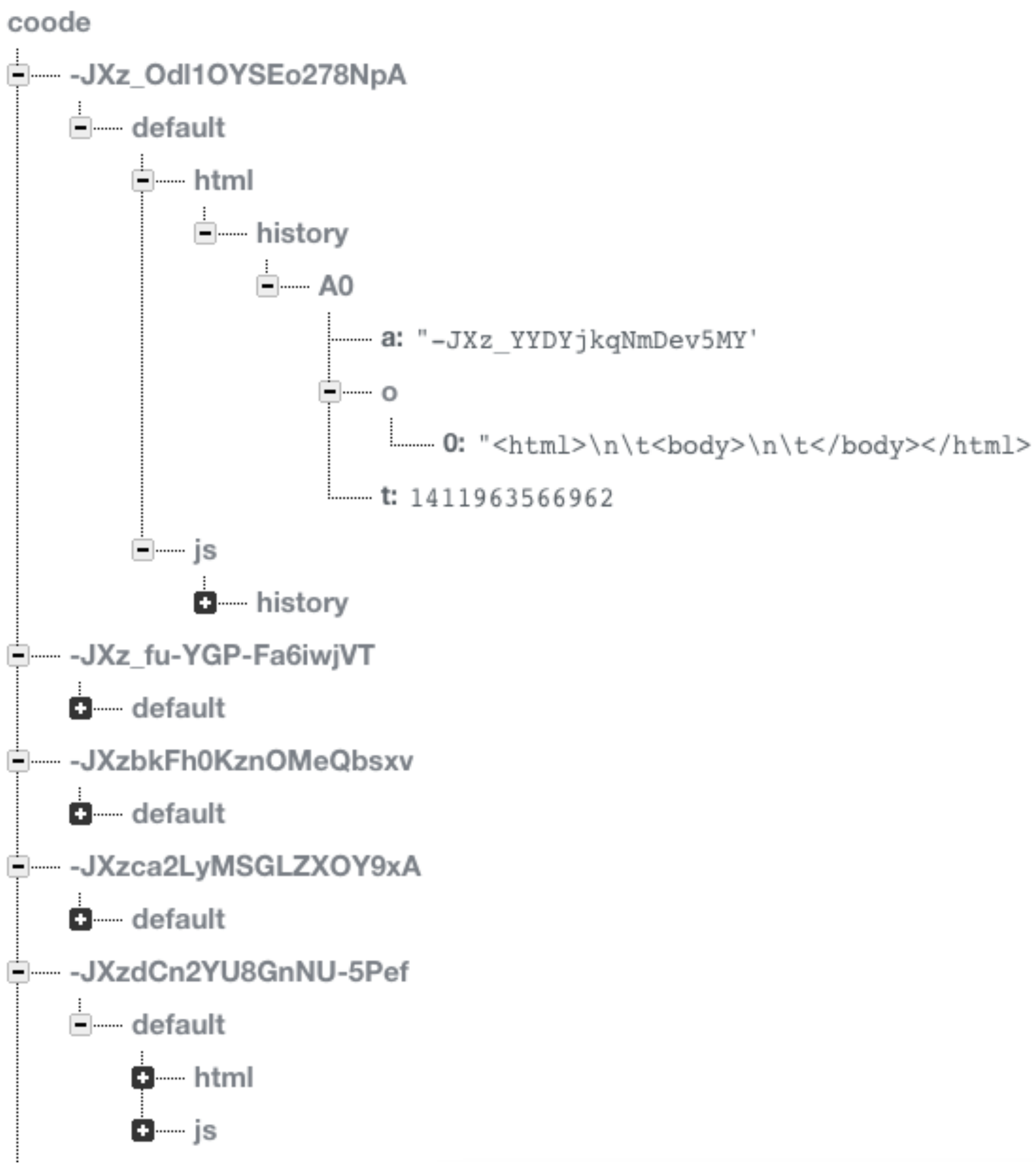


```
myDataRef.on('child_added', function(snapshot) {
```



```
var message = snapshot.val();
displayChatMessage(message.name, message.text);
```

JSON tree



```
coode
-JXz_Odl1OYSEo278NpA
    default
        html
            history
                A0
                    a: "-JXz_YYDYjkqNmDev5MY'
                    o
                        0: "<html>\n\t<body>\n\t</body></html>
                    t: 1411963566962
        js
            history
-JXz_fu-YGP-Fa6iwjVT
    default
-JXzbkFh0KznOMeQbsxv
    default
-JXzca2LyMSGLZXOY9xA
    default
-JXzdCn2YU8GnNU-5Pef
    default
        html
        js
```

Saving data

- set() - sets a location
- update() - updates some keys without replacing all data
- push() - add a list of data to a reference, generating a uniqueID

Retrieving data

- Subscribe to a reference location. Any changes generate an event.
- value, child_added, child_changed, child_removed

Work queues

- Supports transactions - can atomically dequeue item for processing
- Enables sharing processing tasks across pool of clients

Status

- Commercial startup in 2011
- >200K users
- Free tier for small scale use, paid tiers for commercial-scale use
- Acquired by Google in Oct 2014

Competitors

- Traditional JSP, .NET, PHP, … backend
- PubNub - provides realtime data streams
- Realtime.co - realtime messaging infrastructure
- socket.io - can build directly on top of WebSockets

Summary

- Enables pushing processing from backend to clients
- Enables social, collaborative apps to be built without a backend
- Best suited for shared global data where clients are using same version of data
- Not suitable for processing tasks where clients are untrusted or for complex queries on data