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Superpowers for Lightning Web Components: User Interface API

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“Please allow me to introduce myself”

Sympathy for the Devil - Rolling Stones



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ChristianMenzinger

Independent Salesforce Developer & Trainer

5+ years Salesforce addicted  developers

Munich Developer Group Co-Leader



Trailblazer
COMMUNITY GROUPS

Salesforce MVP  MVP

Salesforce Certified



What is Lightning?

...not a page based design as Salesforce Classic was

The screenshot displays the Salesforce Lightning Experience interface. At the top, the navigation bar includes the Salesforce logo, a search bar, and links to 'Switch to Lightning Experience', 'User User', 'Setup', 'Help', and a 'Sales' dropdown. Below this is a horizontal menu with tabs for Home, Chatter, Campaigns, Leads, Accounts (selected), Contacts, Opportunities, Forecasts, Contracts, Orders, Cases, Solutions, Products, Reports, and Dashboards. The left sidebar contains a 'Create New...' button, a 'Recent Items' list with 'Edge Communications', 'Burlington Textiles Corp of America', and 'User User', and a 'Recycle Bin' button. The main content area shows the 'Edge Communications' account page. It features a 'Hide Feed' button, a 'Click to add topics' button, and a 'Post' button. Below the post button is a text input field with the placeholder 'Write something...'. To the right of the input field is a 'Share' button. Further right is a 'Follow' button and a 'Followers' section which states 'No followers.' Below the feed area, there are links for 'Show All Updates'. The 'Account Detail' section is visible, showing fields for Account Owner, Account Name, Parent Account, Account Number, Account Site, Type, Industry, Annual Revenue, and Billing Address. The 'Account Owner' field is set to 'User User (Change)'. The 'Account Name' is 'Edge Communications (View Hierarchy)'. The 'Account Number' is 'CD451796'. The 'Account Site' is 'Customer - Direct'. The 'Industry' is 'Electronics'. The 'Annual Revenue' is '139,000,000 €'. The 'Billing Address' is '312 Constitution Place, Austin, TX 78767, USA'. The 'Rating' is 'Hot'. The 'Phone' is '(512) 757-6000'. The 'Fax' is '(512) 757-9000'. The 'Website' is 'http://edgecomm.com'. The 'Ticker Symbol' is 'EDGE'. The 'Ownership' is 'Public'. The 'Employees' are '1,000'. The 'SIC Code' is '6576'. The 'Shipping Address' is '312 Constitution Place, Austin, TX 78767, USA'.

salesforce 19 Search... Search Switch to Lightning Experience User User Setup Help Sales

Home Chatter Campaigns Leads Accounts Contacts Opportunities Forecasts Contracts Orders Cases Solutions Products Reports Dashboards +

Create New... Recent Items Edge Communications Burlington Textiles Corp of America User User Recycle Bin

Edge Communications Customize Page | Edit Layout | Printable View | Help for this Page

Hide Feed Click to add topics: ?

Post File New Task More

Write something... Share

+ Follow Followers No followers.

Show All Updates

There are no updates.

Contacts [2] | Opportunities [4] | Cases [3] | Open Activities [0] | Activity History [0] | Notes & Attachments [0] | Partners [0]

Account Detail Edit Delete Include Offline

Account Owner	User User (Change)	Rating	Hot
Account Name	Edge Communications (View Hierarchy)	Phone	(512) 757-6000
Parent Account		Fax	(512) 757-9000
Account Number	CD451796	Website	http://edgecomm.com
Account Site		Ticker Symbol	EDGE
Type	Customer - Direct	Ownership	Public
Industry	Electronics	Employees	1,000
Annual Revenue	139,000,000 €	SIC Code	6576
Billing Address	312 Constitution Place Austin, TX 78767 USA	Shipping Address	312 Constitution Place Austin, TX 78767 USA

What is Lightning?

***When we decided to rebuild our UI,
we didn't reskin it,
we built a powerful platform
that gives you even more access to customize Salesforce.
That's Lightning.***

source: <https://trailhead.salesforce.com/en/content/learn/modules/user-interface-api/get-started-with-user-interface-api>



What is Lightning?

user experience
+
UI framework
+
platform services

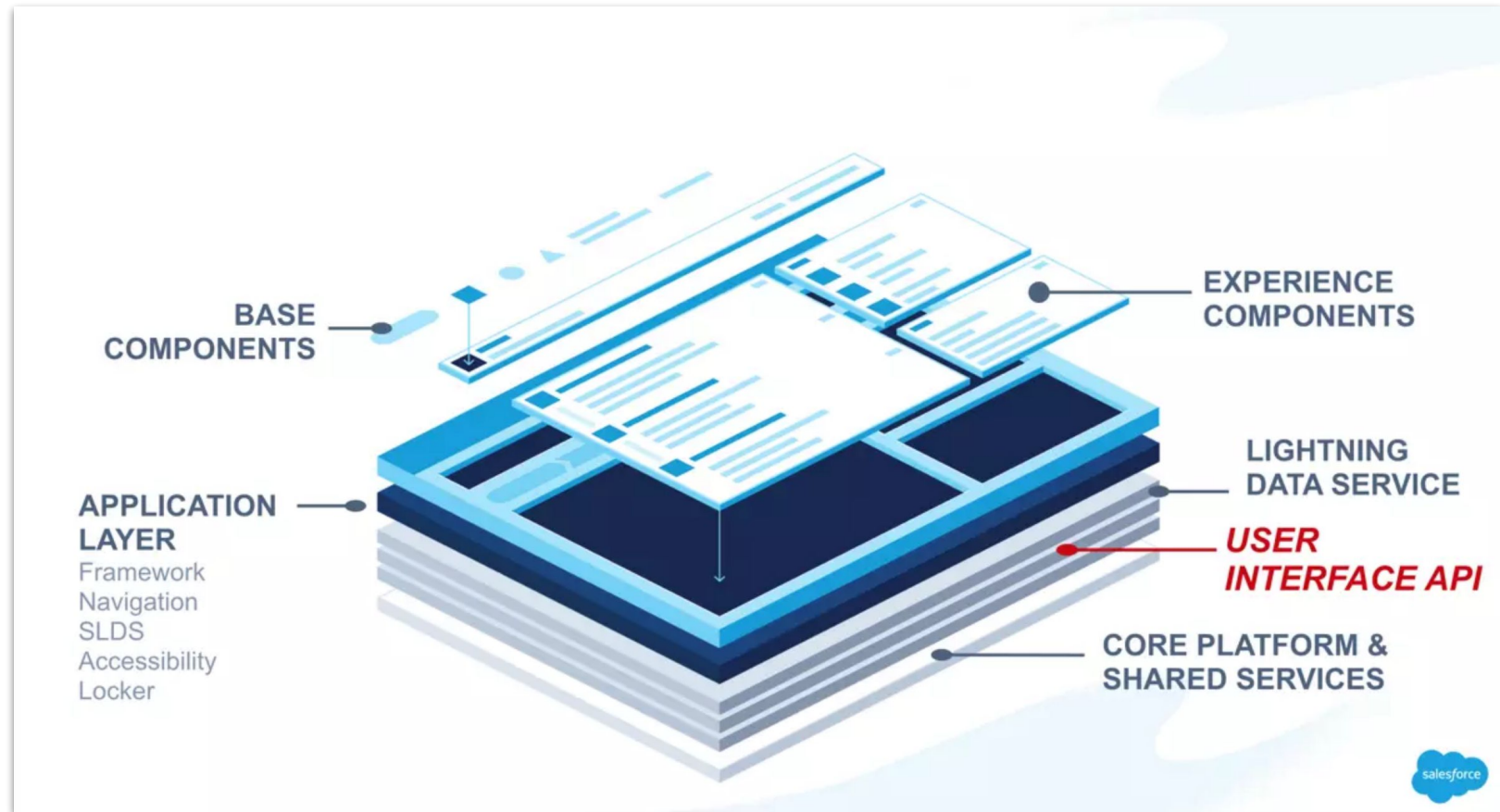


Image source: <https://trailhead.salesforce.com/en/content/learn/modules/user-interface-api/get-started-with-user-interface-api>

User Interface API

public REST API which returns data and metadata
supports requests with multiple record Ids
designed to build custom applications like iOS apps
hooks for record data, list views, favorites, actions & more
responses respects:

- object permissions (CRUD)
- field level security (FSL)
- sharing settings

User Interface API

Example request

```
1 | GET /ui-api/record-ui/001R00000003GeJ1IAK
```

User Interface API

Example response

layout information

```
017 "layouts":{
018   "Account":{
019     "0120000000000000AAA":{
020       "Full":{
021         "View":{
022           "id":"00hR0000000NurZIAS",
023           "layoutType":"Full",
024           "mode":"View",
025           "sections":[
026             {
027               "collapsible":false,
028               "columns":2,
029               "heading":"Account Information",
030               "id":"01BR0000000UjAhMAK",
031               "layoutRows":[
032                 {
033                   "layoutItems":[
034                     {
035                       "editableForNew":false,
036                       "editableForUpdate":false,
037                       "label":"Account Owner",
038                       "layoutComponents":[
039                         {
040                           "apiName":"OwnerId",
041                           "componentType":"Field",
042                           "label":"Owner ID"
043                         }
044                       ],
045                       "lookupIdApiName":"OwnerId",
046                       "required":false,
047                       "sortable":false
048                     },
049                     {
050                       "editableForNew":true,
051                       "editableForUpdate":true,
052                       "label":"Phone",
053                       "layoutComponents":[
054                         {
055                           "apiName":"Phone",
056                           "componentType":"Field",
057                           "label":"Account Phone"
058                         }
059                       ]
060                     }
061                   ]
062                 }
063               ]
064             }
065           ]
066         }
067       }
068     }
069   }
070 }
```


User Interface API

Example response

object information

```
228     "objectInfos":{
229         "Account":{
230             "apiName":"Account",
231             "childRelationships":[
232                 {
233                     "childObjectApiName":"Account",
234                     "fieldName":"ParentId",
235                     "junctionIdListNames":[
236
237                     ],
238                     "junctionReferenceTo":[
239
240                     ],
241                     "relationshipName":"ChildAccounts"
242                 },
243                 ... some child relationships removed for space ...
244                 {
245                     "childObjectApiName":"WorkOrder",
246                     "fieldName":"AccountId",
247                     "junctionIdListNames":[
248
249                     ],
250                     "junctionReferenceTo":[
251
252                     ],
253                     "relationshipName":"WorkOrders"
254                 }
255             ],
256             "createable":true,
257             "custom":false,
258             "defaultRecordTypeId":null,
259             "deleteable":true,
260             "feedEnabled":true,
```

User Interface API

Example response

object information

```
261         "fields":{
262             "AccountSource":{
263                 "apiName":"AccountSource",
264                 "calculated":false,
265                 "compound":false,
266                 "compoundComponentName":null,
267                 "compoundFieldName":null,
268                 "controllerName":null,
269                 "createable":true,
270                 "custom":false,
271                 "dataType":"Picklist",
272                 "extraTypeInfo":null,
273                 "filterable":true,
274                 "filteredLookupInfo":null,
275                 "highScaleNumber":false,
276                 "htmlFormatted":false,
277                 "inlineHelpText":null,
278                 "label":"Account Source",
279                 "length":40,
280                 "nameField":false,
281                 "polymorphicForeignKey":false,
282                 "precision":0,
283                 "reference":false,
284                 "referenceTargetField":null,
285                 "referenceToInfos":[
286
287             ],
288             "relationshipName":null,
289             "required":false,
290             "scale":0,
291             "searchPrefilterable":false,
292             "sortable":true,
293             "unique":false,
294             "updateable":true
295         },
```

User Interface API

Example response

record information

```
482     "records":{
483         "001R0000003ILXdIAO":{
484             "apiName":"Account",
485             "childRelationships":{
486
487             },
488             "fields":{
489                 "AnnualRevenue":{
490                     "displayValue":null,
491                     "value":null
492                 },
493                 ... fields removed for space ...
494                 "Website":{
495                     "displayValue":null,
496                     "value":null
497                 }
498             },
499             "id":"001R0000003ILXdIAO",
500             "recordTypeInfo":null
501         }
502     }
503 }
```

Implementations of the User Interface API

Lightning Data Service (LDS) & Base Lightning Components

LDS adds caching, synchronization and error handling behaviors

ground layer for Base Lightning Components

easiest way to use the power of the User Interface API:

`<lightning-record-form>` out-of-the-box form with support of view, edit, read-only
for compact or full page layout or specific fields

`<lightning-record-edit-form>` displays an editable form with a custom layout of fields

`<lightning-record-view-form>` displays a read-only form with a custom layout of fields

whenever possible use Base Lightning Components!



Using the User Interface API with Lightning Web Components

Prebuilt hooks

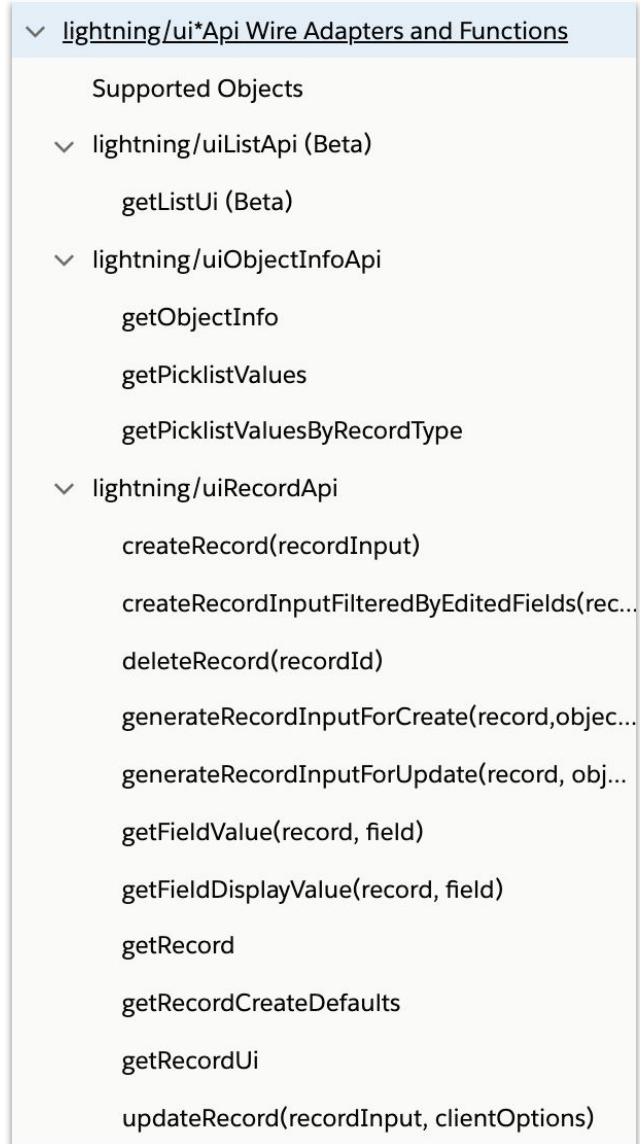
use the `@wire` adapter to access User Interface API hooks:

```
import { adapterId } from 'adapterModule';
```

```
@wire(adapterId, adapterConfig)  
propertyOrFunction;
```

developer documentation:

https://developer.salesforce.com/docs/component-library/documentation/lwc/lwc.reference_ui_api



Lightning Web Components

more standards, less framework

designed to build

complex & sophisticated

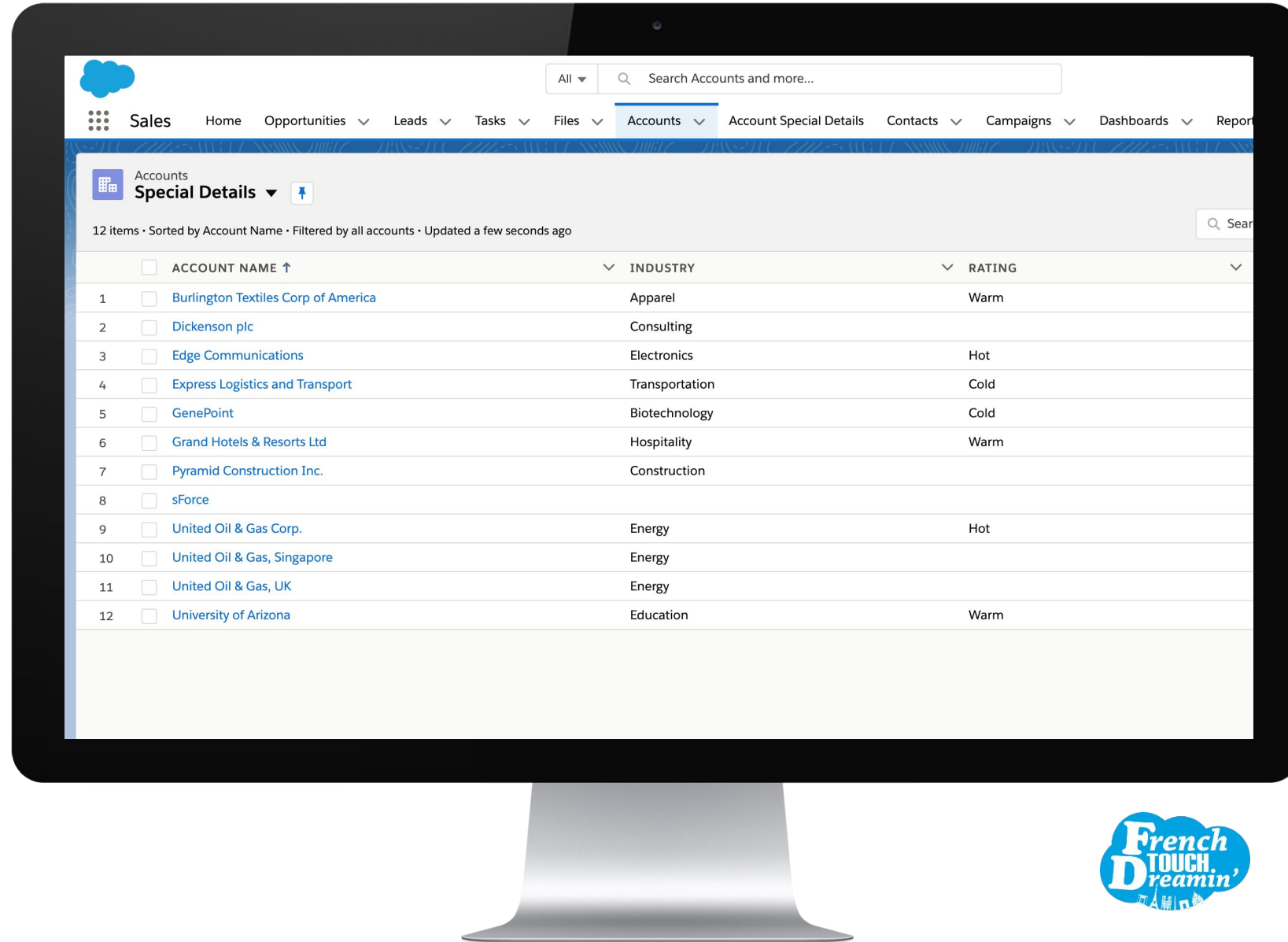
components & single page applications



Demo: build an own visualization of a List View



ChristianMenzinger



Conclusion

review the prebuilt Base Lightning Components when working with data

review the prebuilt hooks into User Interface API

review sample app for a starting point (NOTE: getListUI is in beta currently):

https://github.com/ChristianMenzinger/FTD19_LWC_UI-API_Demo

Build sophisticated interfaces to thrill your users!





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Thank You / Q & A

Remember to tell us what you think in the event survey
www.frenchtouchdreamin.com/survey

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