Javascript Circuit

UNIT 8 REVIEW GUIDE

KEY TERMS & DEFINITIONS

API (Application Programming Interface):
An interface that allows two programs to communicate with one another.

APIs let developers write code to make a request for another program and specify the format in which a response will be given.

AJAX (Asynchronous JavaScript and XML):
A group of technologies that we can use to load data into parts of our page.

$.get() - A shorthand method we can use to request information from a server
Example:

```
$('button').on('click', function(){
$.get(
'result.php',
{ employeeId: 2468 },
function(response) {
$('#userGreeting').html("Hello" + response.fullName);
}
);
});
```

$.ajax() - A method we can use to request and send data to the server that will provide us with greater control over our requests.

Example:

```
$.ajax({
type: "GET",
url: "http://api.openweathermap.org/data/2.5/weather?q=",
data: {
id: 123
},
success: function( response ) {
$('#temp').html("The temperature in Detroit is " + response.temp);
},
error: function() {
alert("There was an error getting weather data.");
}
```

```
});
```

URL (Uniform Resource Locator)
A special kind of path that specifies where a resource can be found on the web.

API Key
Uniquely identifies a user, almost like a signature.

Separation of Concerns
HTML, CSS and JavaScript each address a basic concern - content, presentation, or behavior - and we want to keep these concerns as separate as possible and not mix the responsibilities of the three languages.

Templating
Lets us reference a snippet of code, and fill it in with data we store in JavaScript objects, before adding it to the DOM.

Handlebars
A popular templating library for building clean, logicless templates based on the Mustache Templating Language.

To use Handlebars:
1. Create template in the HTML with placeholders for any data we'll want to add
2. Get the HTML for that template in our JS file using jQuery's .html() method
3. Compile the template (using Handlebars.compile())
4. Create an object literal with any data we want to add to the template
5. Add that data to the template we compiled (var newListItemHTML = template(data);)
6. We can then add the new content to the DOM using a method like append() or html().

Firebase
Firebase, a back-end as a service (BEaaS) that we can use to create our very own API.

CRUD
Describes all of the functions that can be done to data -- Create, Read, Update and Delete.

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GUIDING QUESTIONS

1. What are APIs and how do they work?
2. What is AJAX and why is it useful in our applications?
3. What are some methods that can be used to request data from a server? Hint: we covered two in the first lesson.
4. Why is separation of concerns a key concept in programming?
5. Why would we want to use a templating library?
6. What are the four HTTP methods associated with CRUD?

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EVENTS AND METHODS

Event Object Methods	Description
$.get()	A shorthand method we can use to request information from a server.
$.ajax()	A method we can use to request and send data to the server that will provide us with greater control over our requests.

Settings for $.ajax() Method	Description
type	"GET" if we want to request data from a server and "POST" if we want to send data that updates on a server.
url	The url that the request is being sent to.
data	Any data that is being sent to the server along with the request.
success	A function that runs if the request is successfully completed.
error	A function that will run if there is an error with the request
beforeSend	A function that will run some code before the request starts
complete	A function that will run some code after a request completes.

HTTP Request Methods	Description
GET	Retrieve a resource
POST	Create a resource
PATCH (or PUT)	Update an existing resource
DELETE	Delete a resource
HEAD	Retrieve the headers for a resource

HTTP Status Code	Description
200	OK
301	Moved permanently
302	Moved Temporarily
400	Bad Request
403	Forbidden
404	Not Found
500	Internal Server Error