Week 4 – Anxiety may still be climbing but it gets better

* Looking for Tutoring
* What you should submit
* How are you doing?
* Answers to lots and lots of your questions

# Looking for Tutoring? It is available for this class.

<https://courses.byui.edu/AcademicSupport/tutoring-center/online-tutoring/online-courses-tutoring-guide.pdf>

# Student Showcase

|  |  |  |
| --- | --- | --- |
| Amy Baker | <https://shakerbaker78.github.io/amy_baker_portfolio/> | |
| Evan Harrison | <https://harrevan.github.io/wdd330/> | |
| Jared Kelley | <https://j-a-r-e-d.github.io/wdd330/index.html> | |
| Kate Lewis | <https://lewis-kate.github.io/WDD330/> | |
| Kimi Weldon | <https://kiadawel.github.io/WDD330KW/> | |
| Kyle Brazelton | https://kylebrazelton.github.io/wdd330/ | |
| Nanci Newell | <https://nancinewell.github.io/wdd330/w3_exercises.html> | |
| Sunday O. Onwuchekwa | <https://onwuchekwa.github.io/onwuchekwa_wdd330.github.io/> | |
| Giacomo Draghi | <https://giacomo-draghi.github.io/Giacomo_Draghi_WDD330/index.html> | |
| Cassie James | <https://cassiejones9.github.io/WDD330/> | |
| Eve Awe | <https://awe19001.github.io/WDD330/> | |
| TJ Checketts | <https://tjchecketts12.github.io/WDD330.Portfolio/> | |
| Scott Robison | <https://casaderobison.github.io/wdd330/> | |
| Brenda Wicker | <https://wicker-brenda.github.io/WDD330/> | |
| Nathan Web | <https://nwrocketman64.github.io/WDD330/> | |
| Jandy Kiger | <https://jandyrae.github.io/WDD330/> | |
| Erendira Can Calderon | [https://erendiracan.github.io//WDD330/index.html](https://erendiracan.github.io/WDD330/index.html) | |
| David Hendricks | <https://dave-git-user.github.io/port/> |
| Perry Raleigh | <https://perryraleigh.github.io/WDD-330-Portfolio/> |
| Tristin Parker | <https://gidgidonihah147.github.io/WDD-330/index.html> |
| Megan Shaw | <https://meganlynn012.github.io/pretzel-milk/week2.html> |
| John Sudds | <https://jsuddsjr.github.io/WDD330/index.html> |
| Shane Artman | <https://artman-shane.github.io/WDD_330_Portfolio/index.html> |

The above examples are from this and previous semesters. In the weeks to come I may ask your permission to share your examples with the class.

# What you should submit

Yes, you can send in your notes and I have seen some great notes. You can also submit code. I do want to see both now and then. The notes are very important but being able to apply them to a coding situation is the ultimate proof that you are comfortable with the topics. So, make sure I see your working code now and then. Also do not be stingy in your notes. I see far too many notes that are barely 20 lines. This is your documented knowledge. I hope you are picking up lots of good stuff. Yes, even in weeks two and three.

Don’t have a web site? Try using a GitHub pages. (Imagine me holding a drum and banging it here). Some of you are just submitting your GitHub repo link and that is not gradable. I need to see your work in action. It can be as simple as renaming your repo to be yourName.github.io. Create an index.html page with links to your pages and you’ll be in good shape. After this week I will not accept your files or github links. I need to test your code.

# How are you doing?

Ok, we are now settling into a routine (I hope) in the class. What are your anxieties?

1. **What should my submissions look like?** Please see the student showcase for sample web sites. You will see a number of good examples. I need to see your work progressing. And these samples do a good job of that.
2. **I don’t know as much as my team members.** Don’t be discouraged. Everyone is not at the same level in the class. Ask questions. Most concepts we are working on in this class can be demonstrated in less than 5 lines of code. Your team members can no doubt show you some simple examples.
3. **I don’t have enough time!** We all understand this one. I don’t have a magic spell to resolve it. I find that I need to carve out a time and a space to work on programming. Little interruptions break my concentration. Eliminate distractions as best as you can. Try headphones if you have them. I know your next response is ‘that is not possible in my world’. Then do not try and absorb all of the reading at once. Take bite sized pieces of time. Do your best in 15- or 20-minute intervals. Do not cause your own distractions. Remove your phone from your study space!! Close tabs you don’t need. Bing is my home page. It has a list of news and interest items on the bottom that I might find interesting. Guess what? It turns out Bing is a genius at distracting me. So, I removed ‘News and Interests’ from my home page. It is sad that I have so little self-control ☺. Guess what? It turns out I don’t need to know what happened on this day in 1869!
4. **Am I going to make it?** Still have doubts? Listen to an Elder Holland talk. He’s been where you are. If you have 5 minutes watch this video ‘Things will get better’ <https://www.youtube.com/watch?v=_pJU7SRisRA>. You have a team to work with you. Be a team. Support each other. Ask me questions if you get stuck. Use the tutors available to you. There are many resources out there for you. You do not have to do this on your own. Elder Clark (Then Pres. Clark) said ‘we have to learn for ourselves but not by ourselves’. Finally, there is always prayer. If you grouped all of my prayers by topic, surely in the top ~~ten~~ five would be prayers about my career. Right now, schooling is your career. I think your Father in Heaven has a pretty good idea about programming. He did an amazing job with DNA. Let Him give you a hand. I have had numerous answers to programming prayers over the years.

## Questions

Questions in general. Too often I see questions that can be resolved with a 10 second Bing search. (I don’t like Google). Using the search engines will be a part of your professional life. Don’t hesitate to use them frequently. If you are not familiar with W3Schools or StackOverflow yet you have not been searching for help enough. There are great resources out there make use of them. Again please ask me questions but do your homework first.

Problem 8 – What is going on there?  
Here the answer. Let’s tear it apart.

const transportation = data.reduce(function(obj, item) {  
 if (!obj[item]) {  
 obj[item] = 0;  
 }  
 obj[item]++;  
 return obj;  
}, {});

Notice the last line has, {}. That is the initializer for the reduce. It is just an empty JSON object.   
This line if (!obj[item]) {  
is testing to see if the JSON object contains an entry for the item (car, truck, walk....). If it does NOT then the then statement obj[item] = 0;  
will create a new element in the JSON object for car, truck, walk.... and initialize the element to 0  
then the next line will add 1 to the count for the item  
 obj[item]++

MORE Question

## What are template literals?

It is a way to insert variables into your strings without the trouble of the quotes and plus signs.

// a list for Crew members that survived  
let crewMembers = passengers.filter(p => !p.passenger && p.survivor );  
***console***.log(`Titanic Crew count: ${crewMembers.length} that survived` );

See the console.log? I could have printed the crew count like so

***console***.log(“Titanic Crew: “ + crewMembers.length + “ that survived”);

I like the first example best. There is a lot less noise in the code. Fewer opening and closing quotes and plus signs between everything.

The text is enclosed in back tics ( ` ), not single ‘ or double “ quotes. The variables are wrapped in a dollar sign and curly braces – ${hereIsMyVariable}. The two examples do the same thing. It is just programmer choice on which one to use.

## Question – Can I put functions inside of functions?

You sure can. This is an example of how you might do it.

function func1() {  
 let func2 = (opt1) => {***console***.log(`this is option1 ${opt1}`) };  
 function func3 (opt2) { ***console***.log(`this is option 2 ${opt2}`)}  
  
 func2('hello WDD-330 -- this is func2')  
 func3('hello WDD-330 -- this is func3')  
}  
  
func1();

## What is best, onclick() or addEventListener()?

onclick() or addEventListener() both do the very same thing as you know. So why one over the other. onclick is a CONTROL action buried inside of a VIEW file. You have a tiny bit of JavaScript in an HTML element. So, for MVC purposes I use addEventListener and do that stuff in my JavaScript file.

## What is the deal with this class?

Sometimes, I don't understand what we are doing in this class. Such as projects and actual assignments. It seems to me that we are just going over reading and taking notes and experimenting on the things that we read and learn but I am not 100% sure.

You are correct the first part of this class there are not quantitative test over individual topics. The team activities are presenting patters of AJAX, JavaScript, and CSS that you practice yourself to build some muscle memory on that topic. The reading and taking notes is reinforcing a study pattern. Read the material note what you have learned. Hopefully establishing a pattern in your learning habits. And along the way you get a nice set of notes to refer to later when you are writing code.

A second answer to this question

You do these team projects that reinforce the different topics of AJAX, CSS, JS. Then at the end of the class you will create a personal project that puts them all together. It is very easy to do the weekly assignments and get 60% of your grade from them. The last 40% will come from integrating what you learned and putting that in something of your own design.

## What is the deal with weak sets or maps

Not ever having used them I will give you my opinion based on my reading. I believe they are ‘weak’ for this reason – IF NO other object references the objects in a WeakMap(Set) then they can be garbage collected. They are ‘weak’ because they do not hold on tightly to the objects they contain. They can be garbage collected without the map/set being aware of it. That is my weak understanding.

## Are "sets" and "maps" already being readily used?

sets are great for keeping track of unique items. In the Titanic code I mentioned in the Announcement I use a set to give me the unique titles of the passengers and crew on the ship.

titles = new Set(passengers.map(p => p.firstName.split(" ")[0]));

console.log(`Titles of the people on the Titanic? ${Array.from(titles).join(",")}`);

Maps are very handy for collecting lots of objects and having a unique key to find the desired object. Like using a student ID as a Key to retrieve the student record in a Map holding all students

## Are bitwise operators used and in what situations?

Not so much anymore. They were much more important 30+ years ago when memory was expensive. We would put 16 T/F flags in a 16-bit integer because of the efficiency of memory. Not really a need any more.

## Does some of the example codes have errors in Chapter 3?

I have not heard. Which ones specifically are you referring to? Can anyone help out here?

## Is it possible to invoke as many callbacks as necessary in the same function?

Yes, It is called callback hell. It can become very messy. I created a JS search engine for a friend using many layers of callbacks. I sorely need to refactor it because I currently have at least 5 or 6 layers of callbacks.

## Can any callbacks be used inside other callbacks?

I think you are talking about recursion. Yes you could do that if you are careful to have a guaranteed exit.

## Why use alert() you can always use console.log()?

Alerts are an abomination! I hate them! They are just a connivence, so you don't have to look in the console. Other than that you would not likely see them used in an enterprise level application

## Do you mean to say that arrow functions are solely for the purpose of writing functions? Like why do we really need them if the body of the function still pretty much looks the same if there is a lot of code in the function?

You are correct. They are perfect for one-line functions such as you would use in a filter, map or reduce situation. If they are used where you need 10, 20,.. more lines of code, then you (in my opinion) should consider breaking it out into a standalone function referenced in the callback. Definitely programmer’s choice.

## Are ternary operators faster than if statements? What is the benefit of them?

They are great for one line of code if-then-else statements. They are exactly as fast as an if. Under the covers they are doing the exact same thing.

## Is one function declaration better than another? Anonymous vs fat arrow vs function

Programmer’s choice. They all do the same exact thing. Exactly. IMO, readability is the key. Don't be too cute with your programming. Making it too concise can make it less obvious what is going on. Make it so the person supporting your code does not curse your name.

## What are the use cases for 'symbols'

If you need a GUID. Global Universal ID. If you need a unique key, this is a fine way to generate one. I have not used them, but that is how I would envision their best use.

## is it a best practice to use default parameters?

I personally don't like them (however just today I used them :-)) They force the programmer to remember the implementation of the method. I make enough mistakes on my own. Remembering that function has a default parameter is a responsibility I do not want to take on. Again, this is programmer’s choice. Do what works best for the code and **document the heck out of it!**

## What is the new key word?

new is similar to the new construct in Java or C#. You have a function that uses the this attribute to assign values to this. Let's look at an example

function Car(make, model, year) {

this.make = make;

this.model = model;

this.year = year;

}

// we will create two NEW Cars with these lines of code

const car1 = new Car('Eagle', 'Talon TSi', 1993);

const car2 = new Car('Acura', 'RDX', 2021);

new memory will be allocated and the values for make, model and year will be assigned unique values for the separate cars.

NEW instructs the JS Engine to find a block of memory to use for the newly created object

Where do I find fun APIs?

I just Bing search fun APIs. Programmers have really latched on to APIs for providing data to their apps. There are some fun ones to play with, out there. Definitely check out RapidAPI.com. They have curated hundreds of APIs for about anything your care to investigate. Many of free for the level of use you would make out of them.