**Udemy**

**JavaScript Fundamentals Part 2**

**Coding Challenge #4**

**The Problem**

1. Create an array ‘bills’ containing all 10 test bill values.
2. Create empty arrays for the tips and the totals (‘tips’ and ‘totals’).
3. Use the ‘calcTip’ function to calculate tips and total values (bill + tip) for every bill value in the bills array. Use a for loop to perform the 10 calculations.

TEST DATA: 22, 295, 176, 440, 37, 105, 10, 1100, 86, 52.

**The Solution**

*const* bills = [22, 295, 176, 440, 37, 105, 10, 1100, 86, 52] ;

Here we have created our array that contains our test data.

We now need to create two arrays; tips and totals.

*const* tips = [] ;

*const* totals = [] ;

**calcTip Function**

We now need to calculate how much tip to add for each bill.

*let* a = 100

*const* tip = *function* (*a*) {

return (*a* \* 0.2) ;

} ;

console.log(`The tip is set at 20% which is; ${bill(a)} when the bill total is ${a}.`);

Now we have a function that calculates how much tip we need to add onto the bill amount.

*let* billTotal = *function* () {

return a + tip(a);

} ;

Here is a simple function that returns our bill total.

**For Loop**

We now need to create a for loop which takes the values out of the bills array and performs calculations on them.

Graphical user interface, text, application

Description automatically generatedRemembering our array from earlier. We have an array length of 10.

It is important that we do not create an infinite loop. We need to set a start and a stop point.

Because the array has a length of 10, we could use this to prevent our loop from exceeding this number. We can use the .length property. In this instance, if we used .length, it would stop at position 9. If we continued to add to the array in the future, it would automatically stop at the final position. This will prevent an infinite loop.

for (*let* i = 0; i < bills.length ; i++ ) {

console.log(bills[i]) ;

} ;

Graphical user interface, application, Teams

Description automatically generatedWe now have a simple loop that starts at position 0 which is 6.

Continues until ‘i’ is less than the length of the array, which is position 9 which is 52.

The for loop will continue in increments of 1.

Now that we have created a basic outline for a for loop, we can use it to take the data points and calculate new tip and bill totals.

**Final Code Block**

//Array for Bills containing test values

*const* bills = [22, 295, 176, 440, 37, 105, 10, 1100, 86, 52] ;

console.log(bills);

*const* tips = [] ;

*const* totals = [] ;

*const* tip = *function* (*a*) {

return (*a* \* 0.2) ;

} ;

*let* billTotal = *function* (*a*) {

return *a* + tip(*a*);

} ;

for (*let* i = 0; i < bills.length ; i++ ) {

console.log(`Your bill total is $${bills[i]}. Your tip total is $${tip(bills[i])}. Your bill total is: $${billTotal(bills[i])}.`) ;

**Text

Description automatically generated**} ;

**Extra Challenge**