

CSC309 Lab 2

Javascript - extra practise

Answer the following questions. Check your answers in the browser.

Closures and Hoisting

1. What will the following code output? (remember we are using var here)

```
var b = 1;
function outer(){
  var b = 2
  function inner(){
    b++;
    var b = 3;
    console.log(b)
  }
  inner();
}
outer();
```

2. Create a function makeAdder(a) that returns a function that adds a to a given number. E.g:

```
const addTwo = makeAdder(2)
addTwo(3) // 5
const addThree = makeAdder(3)
addThree(4) // 7
addThree(4) // 7 (doesn't keep adding)
```

3. What is the output of the following code?

```
(function(a) {
  return (function(b) {
    console.log(a);
  })(2)
})(1);
```

Objects

1.

```
const student = {
  name: 'Sally',
  getName: function () {
    return this.name;
  }
};

const g = student.getName;
console.log(g());           // output?
console.log(student.getName()); // output?
```

2.

```
const num_toppings = function() {
  return this.toppings.length
}

const pizza1 = {
  toppings: ['cheese', 'pepperoni', 'mushrooms']
  getNumToppings: num_toppings
}

const pizza2 = {
  toppings: ['pineapple']
  getNumToppings: pizza1.getNumToppings
}

const a = pizza1.getNumToppings(); // value of a? (or error?)
const b = pizza2.getNumToppings(); // value of a? (or error?)
const c = num_toppings(); // value of a? (or error?)

const d = num_toppings.bind(pizza1)
const e = d(); // value of e? (or error?)

const k = pizza1.getNumToppings.call(pizza2) // value of k? (or error?)
```

3.

```
const students = {  
  student1: {  
    name: "James",  
    friend: {  
      name: "Jimmy"  
    }  
  },  
  student2: {  
    name: "Jen",  
    getNameFunc: function(){  
      return this.name  
    }  
  }  
}
```

Q: How can you get `student1`'s friend's name ("Jimmy") by using `student2`'s `getNameFunc`?