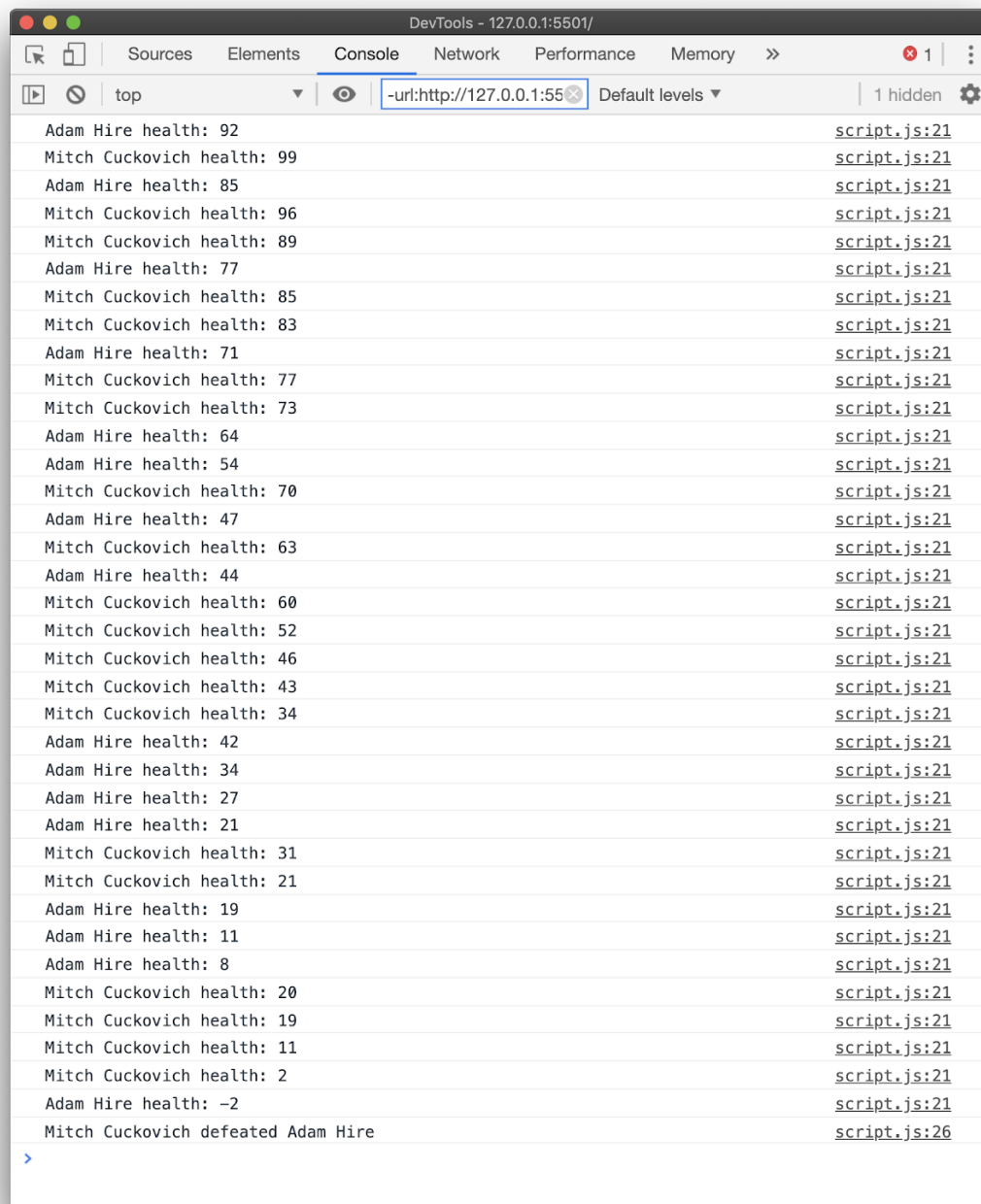


JAVASCRIPT LAB 2 - GAME

Task: This lab will focus on three ways of writing out functions: function declaration, function expression, and arrow functions. The goal is to properly log statements to the console by using a mixture of the aforementioned topics. While this lab explicitly asks you to use certain functions, it is worth mentioning that each example **could** be written using any of the three methods for defining functions. You will only need to construct an **index.html** and **script.js** file. Final output example:



The screenshot shows the Chrome DevTools Console with the 'Console' tab selected. The address bar shows the URL `-url:http://127.0.0.1:5501/`. The console displays a series of log messages from `script.js:21` and `script.js:26`. The messages track the health of 'Adam Hire' and 'Mitch Cuckovich' over time, showing a decreasing trend for both. The final message indicates 'Mitch Cuckovich defeated Adam Hire'.

```
Adam Hire health: 92
Mitch Cuckovich health: 99
Adam Hire health: 85
Mitch Cuckovich health: 96
Mitch Cuckovich health: 89
Adam Hire health: 77
Mitch Cuckovich health: 85
Mitch Cuckovich health: 83
Adam Hire health: 71
Mitch Cuckovich health: 77
Mitch Cuckovich health: 73
Adam Hire health: 64
Adam Hire health: 54
Mitch Cuckovich health: 70
Adam Hire health: 47
Mitch Cuckovich health: 63
Adam Hire health: 44
Mitch Cuckovich health: 60
Mitch Cuckovich health: 52
Mitch Cuckovich health: 46
Mitch Cuckovich health: 43
Mitch Cuckovich health: 34
Adam Hire health: 42
Adam Hire health: 34
Adam Hire health: 27
Adam Hire health: 21
Mitch Cuckovich health: 31
Mitch Cuckovich health: 21
Adam Hire health: 19
Adam Hire health: 11
Adam Hire health: 8
Mitch Cuckovich health: 20
Mitch Cuckovich health: 19
Mitch Cuckovich health: 11
Mitch Cuckovich health: 2
Adam Hire health: -2
Mitch Cuckovich defeated Adam Hire
```



Build Specifications:

- Declare an arrow function named **randomDamage** that has no parameters and returns a random integer between 1 and 10.
- Declare an arrow function named **chooseOption** that has two parameters named **opt1** and **opt2**. **chooseOption** does two things:
 - Declares and initializes a variable named **randNum** to either a 0 or 1, randomly.
 - Returns **opt1** if randNum is equal to 0 otherwise return **opt2** . (Use a ternary operator)
- Declare a function expression named **attackPlayer** that has one parameter named **health** which returns a number equal to **health** minus the result of the **randomDamage** function.
- Declare an arrow function named **logHealth** that has two parameters named **player** and **health** which has a console.log method to state the following message: “**player** health: **health**”.
- Declare an arrow function named **logDeath** that has two parameters named **winner** and **loser** which has a console.log method to state the following message: “**winner** defeated **loser**”
- Declare an arrow function named **isDead** that has one parameter named **health** which returns a boolean value of true or false based on the following condition: **health** <= 0;
- Declare a function declaration named **fight** that has four parameters.
 - Parameters:
 - **player1** - this will hold the name of the first player
 - **player2** - this will hold the name of the second player
 - **player1Health** - this will hold the health of the first player
 - **player2Health** - this will hold the health of the second player
 - Within the **fight** function, write a while loop that loops while true
 - Declare and initialize a variable named **attacker** equal to the **chooseOption** function with **player1** and **player2** as arguments.
 - Has an if statement that is triggered when **attacker** is equal to **player1**.
 - Set **player2Health** equal to the result of **attackPlayer** with **player2Health** as its argument.
 - Calls the **logHealth** function with **player2** and **player2Health** as its arguments.
 - Call **isDead** with **player2Health** as an argument. If the result is true:
 - Call the **logDeath** function with **player1** and **player2** as arguments.
 - Break
 - Has an else statement that:
 - Sets **player1Health** equal to the **attackPlayer** function with **player1Health** as its argument.



- Call the **logHealth** function with **player1** and **player1Health** as its arguments.
- Call **isDead** with **player1Health** as an argument. If the result is true:
 - Call the **logDeath** function with **player2** and **player1** as arguments.
 - Break
- Lastly, call the **fight** function with the required four parameters. You pick the names and starting health. For example: player1: "Mitch", player2: "Adam", player1Health: 100, player2Health: 100.

Tests: Same as build specifications.

Extended Challenges:

Write some additional functions. Use whatever function style you like. Here are some ideas...

- **printSquare:** This function has a parameter for width. It logs a square shape to the console based on the width parameter. For example, given width 3, it would log:


```
###
###
###
```
- **printTriangle:** This function has a parameter for width. It logs a square shape to the console based on the width parameter. For example, given width 4, it would log:


```
#
##
###
####
```
- Think of other shape methods you could write.
- **getGrade:** This function takes in a number parameter (0 to 100). It returns the corresponding letter grade using the scale: A=90+, B=80+, C=70+, D=60+, F=below 60. Call the function with different numbers and log the results. (Note: there should be no console.log *inside* the function.)
- **prioritize:** This function has two parameters, **urgent** and **important**, both boolean. It returns the priority according to this rule: urgent & important → 1, important not urgent → 2, urgent not important → 3, neither urgent nor important → 4.

