

Javascript test

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Task 1

The document object model is a representation of the web page in like a hierarchical tree with the `<html>` node on top that branch down into categories like `<body>` which then branches further depending on the content inside.

InnerHTML is a setter&getter for HTML based content from javascript using the `.innerHTML` in a way to either get content stored or set new content to it. You could as an example change the inner content of a `<div>` with it.

By using the `addEventListener()` method in javascript you can track the users input such as movement of the mouse cursor or if a specific key is pressed and then execute some code if the event is triggered, perhaps showing a tooltip when hovering the mouse over a certain area.

Functions are fundamental building blocks of code in javascript (aswell as other languages) where you can execute a method that will do something and instead of writing the same code over and over you can call the function with or without passing arguments depending on the usage.

An application programming interface (API) is a set of protocols or routines used for different softwares to communicate with each other. One usage is to send an API request to a web site that contains your personal API key, which acts as a way to identify yourself so the recipient knows you are allowed to access the data, along with some sort of data request which then based on the servers protocols will return data back to the user.

AJAX, or Asynchronous javascript and XML, is basically a web development tool that allows you to create responsive and interactive web applications through live data transfers, thus without the need to refresh the page.

Part 2

Purple: the word function defines that you are creating a method that will execute the following code when called upon.

Yellow: name is the parameter that is passed into the function, it could be called anything really and when the function is called it will pass along the parameter and in the function the value of the passed parameter will be linked to "name".

Blue: the `console.log()` calls a function that will log the parameter in the console.

Red: return will return back something to the caller of the function, in this case it will concat a string with 'hello ' + the value of the parameter called name. The returned value could be used by some other code to perhaps just print out the string to the screen like "hello Mattias".

Green: 'hello ' is simply a string that in this case is returned together with the value of the passed parameter value.

Part 3

The difference between local and global scope is where you can access certain variables and functions. If a variable is defined within a function then the only way to access the variable is by using the function and thus is a local scope compared to a variable defined in the global scope where

it is not within any block or function and is then accessible globally without calling any specific function.

As explained in part 1 an API is a set of protocols or routines that allows for communication between softwares. Some browser contained API are the Geolocation API that allows the web application to access the users location or the Event API that tracks certain inputs like mouse cursor movements.

jQuery is a javascript library that contains a lot of prewritten functions that allows the developer an easy and fast way to manipulate HTML documents, handling events or creating animations. jQuery is mainly used due to the fact it saves a lot of time and effort for the developer since you can use the prewritten functions instead of writing them from scratch and it's simple, clean and easy to use.

The main drawback of jQuery is like the use of any library that it cause performance issues. When using it you load more things into the memory that you would otherwise do if you had written specific functions instead. Another disadvantage is that you are adding a third-party library that you have no control over since it can change over time and cause dependency or compatibility issues further down the road with other libraries or frameworks. Bloating the code with large libraries can cause issues for users with limited connection speed or limited data usage (like maybe the user only have 1GB of data transfers monthly through the phone and this can drain it faster).

Object oriented programming (OOP) is a style of programming that relies on the usage of objects that contains data. An example could be the object Car that contains information such as what type of car it is, what the color of the car is, how fast it can accelerate or how many doors it has. Common features of OOP is inheritance where an object can inherit certain properties or methods from a parent object and encapsulation where you basically hide the internal workings of an object much like how the engine is hidden from sight in a car but instead you have access to the steering wheel and other tools that in turn communicates with the engine.

The troubleshooting process is usually done in certain steps, first the problem needs to be identified through looking at error messages in the console or observing strange behaviors in the browser such as a loading bar that fills up above 100%. Once the problem is identified, maybe by another user and reported to you, the problem should be reproduced to see if the unexpected behavior is due to user error or actual errors in the code. If the error can be reproduced then the next step is to debug the actual code and identify what's causing the error by using certain tools like the browser development tools, debugging libraries or the code editors. The last step is to fix the code by changing faulty code into code that will do the task in a way that is expected by the user.

Part 4

The code defines the object "car" that has the "speed" property (initially given the value of 0mph) along with the function "initDrivebutton" that creates a button element with an event listener that will set the "speed" property to 100mph and logs the value to the console. The issue here is the usage of "this" keyword since it refers to the button element and not the actual "car" object. By changing "this.speed" into "car.speed" it will override the actual speed and log 100mph instead of 0mph.