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Week 5 Research
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Prompt 1:

The four pillars of Object-Oriented Programming are abstraction, encapsulation, inheritance, and polymorphism.

- Abstraction is used for hiding the details of what is being used. To do this you find the parts of code that are the same and turn them into function or object that can be used in several places and can handle the same issues multiple times. This helps reduce the amount of code that needs to be used.
- Encapsulation is the action of enclosing something inside. This is used to keep code or data hidden so it cannot be accessed. When data is held inside of another item like a function or class there is limited access to the data. The parts that are available are only the parts that are needed to run other parts of the code.
- Inheritance allows one object to use the properties of another object or the methods of that object. This is used when the code for the object is mostly similar or with a few differences. The original object is called the parent and the object that is reusing the properties and methods is called the child. You should not use inheritance when the two objects are not similar or are only using one minor piece of shared data.
- Polymorphism is the condition of occurring in several different forms. This allows the original parent and child objects to become interchangeable. This will only work if inheritance is set up correctly. The parent and child can now share methods that are set up.

https://www.freecodecamp.org/news/four-pillars-of-object-oriented-programming/

Prompt 2:

Objects are created by classes. Classes are considered the blueprint or template for creating an object. Classes hold, or encapsulate, the data to create objects. The constructor method is used when creating a new object. The constructor initializes the object properties once it is created. An object can be created without using classes in JavaScript, but the purpose of classes is to be the blueprint for objects. Classes were introduced with ECMAScript 2015 (ES6).

https://www.w3schools.com/js/js_classes.asp

https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Classes

Prompt 3:

An exception is an error received when one is not expected. There are three types of errors including syntax, runtime, and logical errors. To handle exceptions statements are used. The statements include throw, try…catch, and try…catch…finally. When an error happens then you can use the throw statement to create a custom error message. Try and catch means that you try the code and if it catches an error then it can throw a message back about the error when used with the throw statement. Adding finally to the statement means after the try and catch and error statements have completed then something else will be completed regardless of the outcome of the try and catch. Different situations can cause errors including input from users, programmer errors or other unspecified issues. It is best practice to handle unexpected events so they can be defined and corrected by the user.

https://learn.promineotech.com/mod/book/view.php?id=11765&chapterid=680

https://www.javatpoint.com/javascript-try-catch

https://www.w3schools.com/js/js_errors.asp