Articulate: Encapsulation

Encapsulation is where you store away the internal details of a piece of code. You can access and use this code by making a new object that allows you to use the functionality of a class and its methods without actually having the code visible/available for use. The information behind how it work is completely hidden, while still being useable. It also cannot be manipulated by other pieces of code. A highlight of Encapsulation is that it helps to keep programs more organized. Different pieces of code can be stored in different classes based on their purpose so that the main program doesn’t get too large and difficult to navigate. It also allows you to change a small piece of code that can be called and implemented without affecting other, larger parts of the code. One application of when Encapsulation could be used is a bank account. Clients should have access to their account information and be able to add to/withdraw money from their account. Encapsulation would allow them access without allowing them to actually change any of the information. They can input an amount of money that they want to add/remove, but it doesn’t automatically do what they want it to. It has to go through the hidden behaviors to validate and store the information. If these behaviors were not hidden, they’d be able to change balances without getting them validated, which would cause problems with money going to the wrong places due to user-error.

Example:

All of the details within the scripture class are hidden from other classes. For example, the “HideWords” method is hidden from the main program. For the main program to access the behaviors of this method, it has to create an object of the Scripture class. This is shown when the main program says “Scripture scripture = new Scripture().” Later, it says “scripture.HideWords(),” allowing it to access the “HideWords” method from the Scripture class.

A screen shot of a computer program

Description automatically generated

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