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CS-230 Operating Platforms

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Mod 1 Assignment: UML Diagram

A screenshot of a computer

Description automatically generated

While reading the course materials this week, the reading gives a brief yet thorough description of the main advantages of object-oriented programming (OOP). Portability brings up several key ideas associated with OOP that are relevant to understanding the nature of its benefits. After discussing these ideas, the reading then links them to the four main principles of OOP: portability, inheritance, encapsulation, and polymorphism. The OOP fosters code organization. This outcome is achieved when code is written in classes. Classes make it easy to find bugs. They also make it easy to reuse code. This principle of Inheritance is stressed to cut down on code repetition. The text discusses how certain classes can derive properties and methods from a parent class. The UML diagram shows this elegantly with open arrows indicating the derivation from Bicycle to TwoWheeled and from TwoWheeled to Vehicle. Encapsulation is the practice of keeping a class's inner workings private. You can access those inner workings only using the class's public interfaces and methods. Polymorphism is the ability to access objects of different types through a standard interface. This signifies that we can have other forms of data that are all processed similarly. These concepts of OOP and their practical implications in software development are demonstrated in the UML diagram.