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Assignment 1: Shapes

Define UML?

UML is the Unified Modeling Language. It’s a general modeling technique that we use in development environments. It models and visualizes the design of a system and allows software engineers to design a program before ever writing a line of code. UML helps programmers by being able to layout the design and change it on the fly in a much easier way then changing the code itself.

Can you explain use case diagrams?

Use case diagrams are an important part of the UML. They can visualize and summarize the interactions between the target user and your designed system. Use case diagrams are used to see if the goals of the program are being met from the user’s end and to see the environment where your designed system is interacting with users.

Can you explain class diagrams?

Class diagrams are specific diagrams that are part of the UML. They model objects, or classes. They display the relationships between the objects and the program and display the designed members and methods that each object is intended to have, as well as their respective return types and their availability (public, private, protected). Class diagrams offer programmers a way to visualize relationships and structure in their objects and see how they function in their complex software systems.

How do we represent private, public, and protected in class diagrams?

You can represent private, public, and protected by different symbols next to members or methods in the class diagram. The symbol + stands for public, the symbol – stands for private, and the symbol # stands for protected. For example, look at this hypothetical class diagram.

Application

Description automatically generated with low confidence

The method that calculates angular velocity would be protected, due to the symbol #. The method that calculates Linear velocity is public due to its + symbol. Finally, the method that calculates initial velocity is private because of its – symbol.