

Exercise 4 – Game Engine

Implement a Window System

- implement a Window system or use an existing library with an abstraction layer in between
- push your results on github

Questions

What is a precompiled header? Name pros and cons: It is a header file which includes a lot of other header files.

Pros: The compiler can use this "compiled" header and does not have to read and parse each single header file whenever they are included. This speeds up compilation time.

Cons: If frequently changed files are included, the pch has to be compiled after each change, that slows down the whole process

Describe the layer of abstraction with your own words:

The window does not know about the application and the application does not know about the window. There's a Dispatcher in between to handle the events.

Name the SOLID principles and describe them briefly: (the first five object-oriented design principles to make code maintainable and extendable)

Single Responsibility Principle: a class should have only one purpose

Open Closed Principle: open for extension, closed for modification (use polymorphism)

Liskov Substitution Principle: every derived class should be substitutable for their base class - derived classes should behave correctly, as expected and avoid logical errors due to their parent class (e.g. Square class must not inherit from Rectangular class)

Interface Segregation Principle: a client should never be forced to implement an interface that it doesn't use. In other words, If a class has a function public to the user, it must be callable.

Dependency Inversion Principle: a higher level-module should not depend on a lower-level module, but they both should depend on abstractions, abstractions should not depend on details, but details should depend on abstractions.