

C++ SV Project

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Q.1

Q.1.1

The only logical thing to do is to create a private method. In my case “clamp”

Q.1.2

The reason that the default = and copy constructor are sufficient is that they both do a surface copy of the elements. Coding them by default allows the user of our class to know that they can safely use these constructors.

Q.1.3

A double loop will allow for a more concise piece of code. There is no point in describing it in gory details in this file. See the actual code for implementation details.

Q.1.4

Taking a const reference is almost always better. The only case where we decided to not use a const ref, is in the constructor since we want a copy of the vector to operate on it.

Q.1.5

All the methods that do not affect the Object should be constant. This is extremely important since C++ is strict on how it manages const functions. To see which ones were declared as const see the CircularCollider.hpp file.

Q.1.6

We are simply adding another way to call : we are not writing code that has any functionality. This is important because it allows use to ensure that all of the functions that are designed to have the same behavior behave in the same way. `isCircularColliderInside(other)` `isColliding(other)`; `isPointInside(point)`;

Q.1.7

I chose an internal definition for most of the functions because their equivalent in non operator function calls are also internal.

Q.1.8

For which functions are receiving parameters by reference see .hpp. In all cases where we do not need a copy of the object to operate on it is better to use a const reference since it will improve performance.

Q.1.9

See CircularCollider.hpp for the list on functions that we decided to declare as const.

Q.2

Q.2.1

The draw method should be const. The other ones will make modifications to the environment, therefore they cannot be constant.

Q.2.2

Use the delete of the operator= and the copy constructor.

Q.2.3

This means that when the Environment is destroyed it needs to free all the Animals.

Q.2.4

Warning

The definition of the use of the different keys is done in the EnvTest