

Re: question about constants in C++

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john smith wrote:

- > *I have a question about the best way to use constants in C++. There seem to*
- > *be variations in the way that they are used, and I am confused as to what I*
- > *should be using. Basically since the constant is used in only one class,*
- > *should I try to scope it to just that class? to the file?*
- > *what are the thoughts out there.*

If a constant is part of the class :

1. if the constant will be the same for all objects of that class (PI for a class Math for example), make it a static constant member.

```
// my_math.h
class Math
{
private:
    const float PI;
};
```

```
// my_math.cpp
float Math::PI = 3.1416;
```

Whether the constant is public or not depends on your design.

2. if the constant will change depending on the instances, make it a constant member :

```
// car.h
class Car
{
private:
    const int max_speed;

public:
    Car(int ms);
};
```

```
// car.cpp
Car::Car(int ms)
  : max_speed(ms)
{
}
```

If the constant is not part of a class, make it part of a namespace if possible to avoid name clashes.

In general, always try to keep scopes as small as possible. For example, it is possible for the constant `Math::PI` to be declared at file scope, but it is a better design to make it part of the class it is meant to be used with.

Jonathan