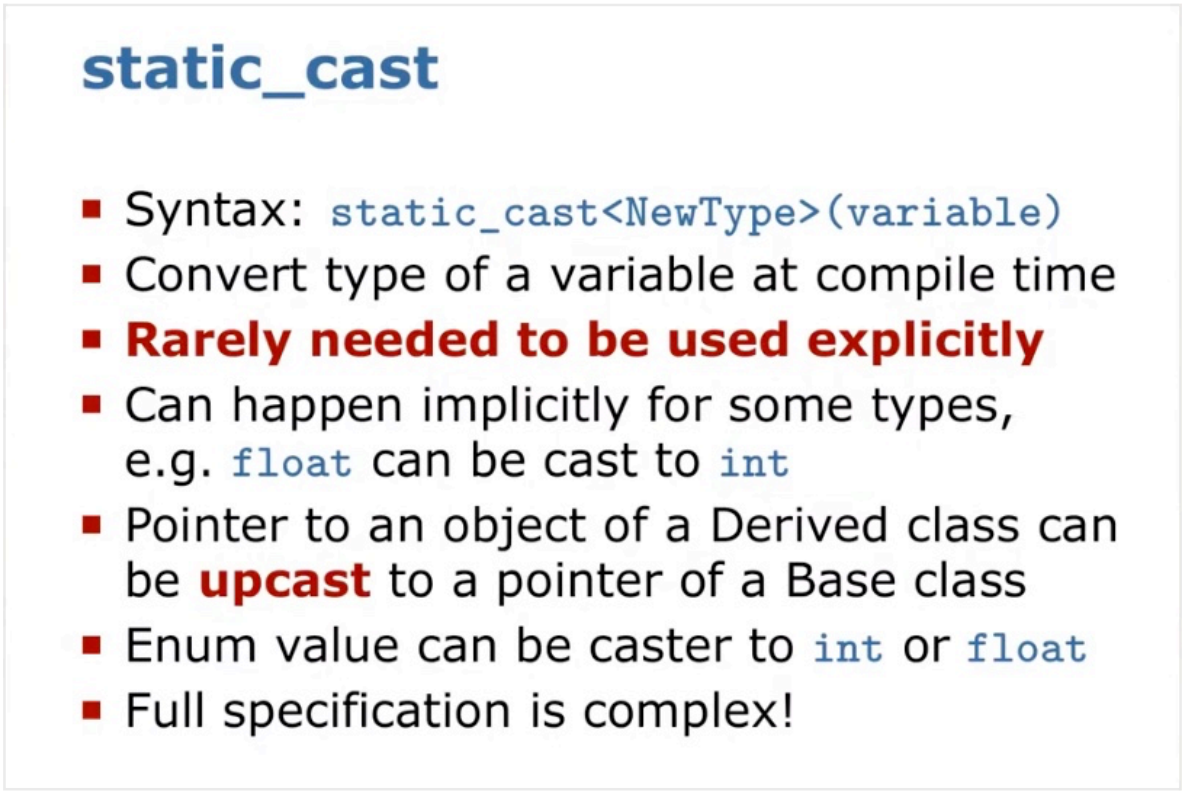
Type Casting

Casting type of variables

- Every variable has a type.
- Types can be converted from one to another.
- Type conversion is called Type Casting.
- There are five types of type casting:
  - Static_cast
  - reinterpret_cast
  - const_cast
  - dynamic_cast
  - C-style cast (unsafe)



dynamic_cast

- Syntax: `dynamic_cast<Base*>(derived_ptr)`
- Used to convert a pointer to a variable of `Derived` type to a pointer of a `Base` type
- Conversion happens at runtime
- If `derived_ptr` cannot be converted to `Base*` returns a `nullptr`
- `GOOGLE-STYLE` Avoid using dynamic casting

reinterpret_cast

- Syntax: `reinterpret_cast<NewType>(variable)`
- Reinterpret the bytes of a variable as another type
- We must know what we are doing!
- Mostly used when writing binary data

const_cast

- Syntax: `const_cast<NewType>(variable)`
- Used to "constify" objects
- Used to "de-constify" objects
- Not widely used