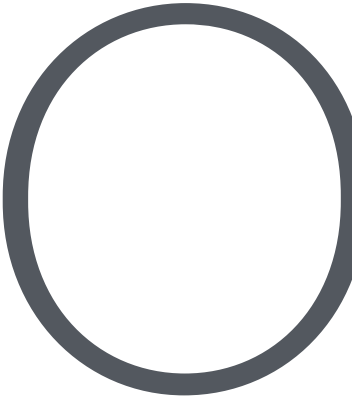
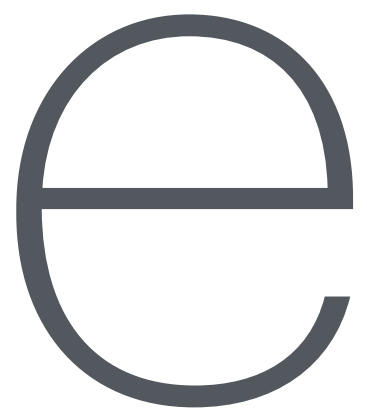
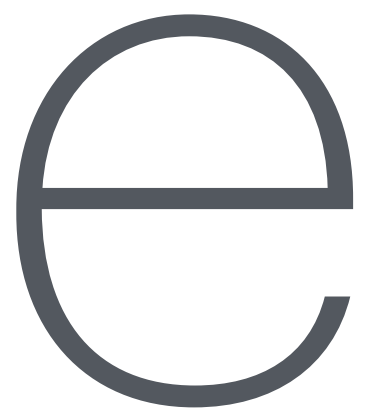
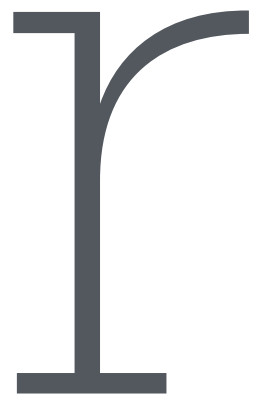
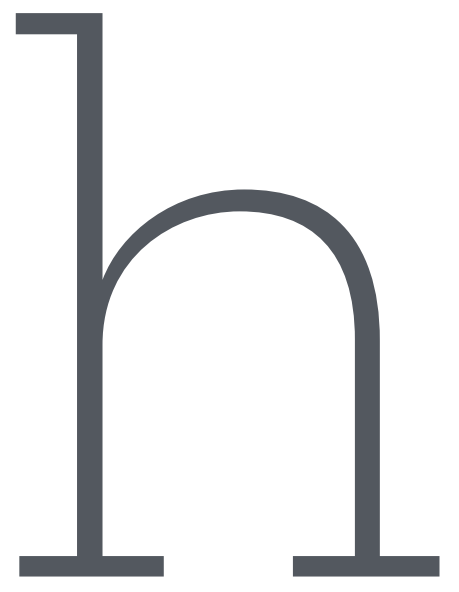
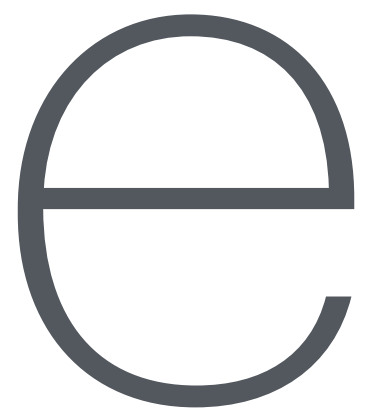


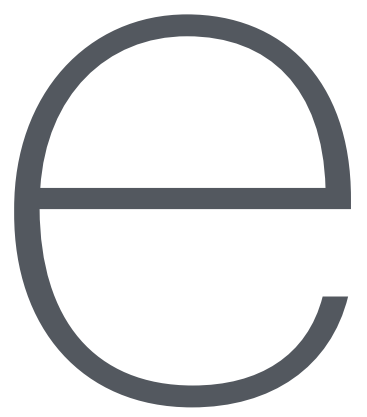


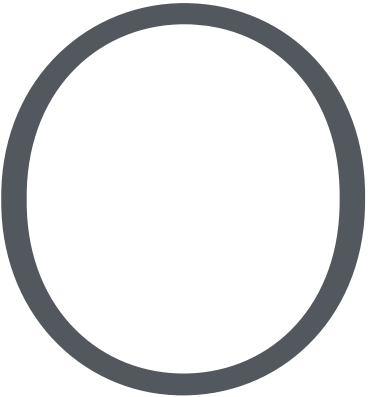


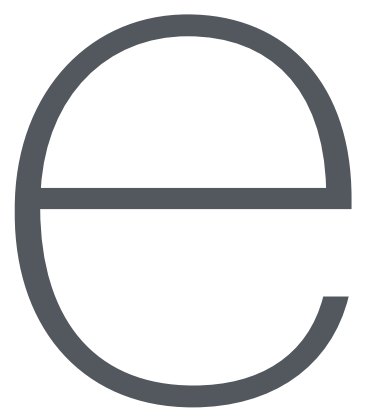


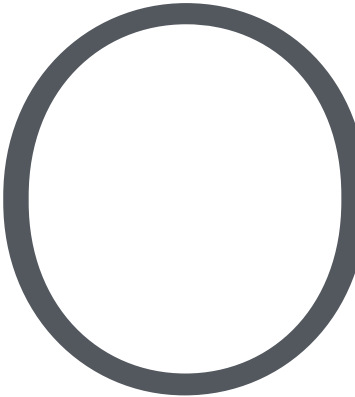


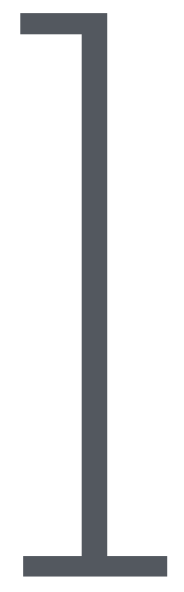


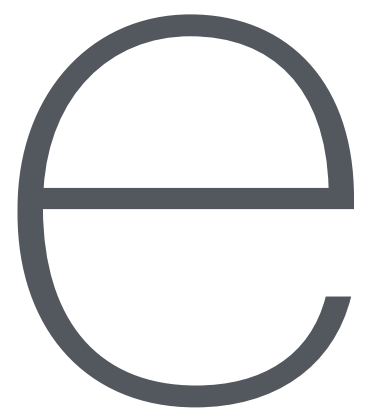


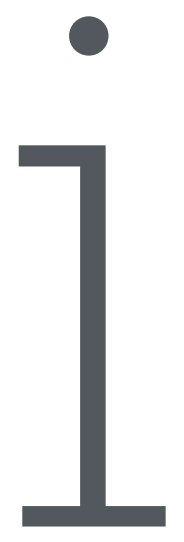


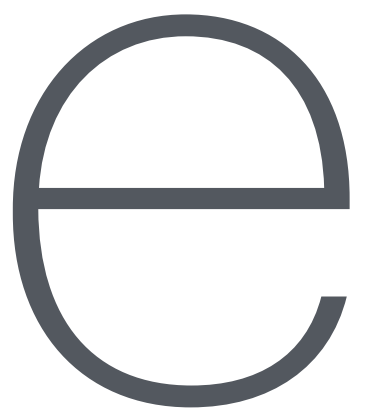


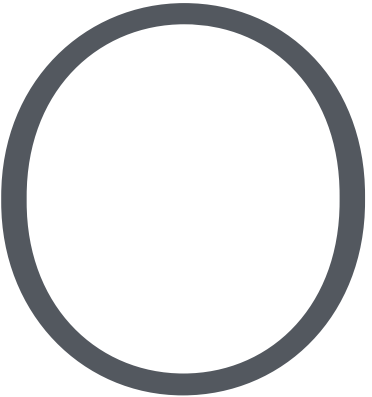


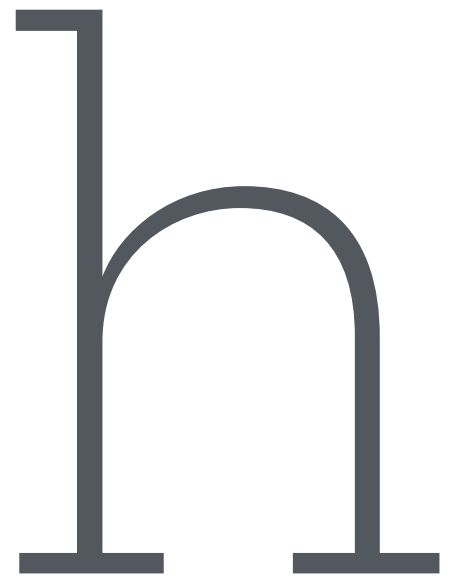


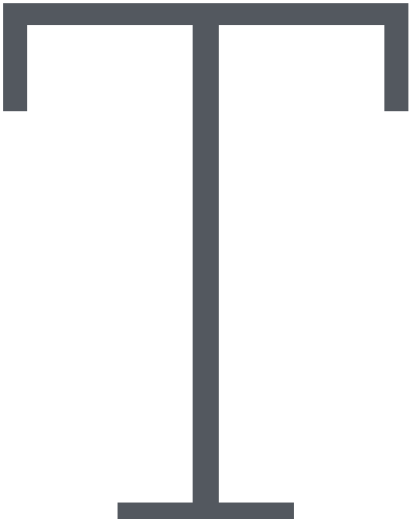


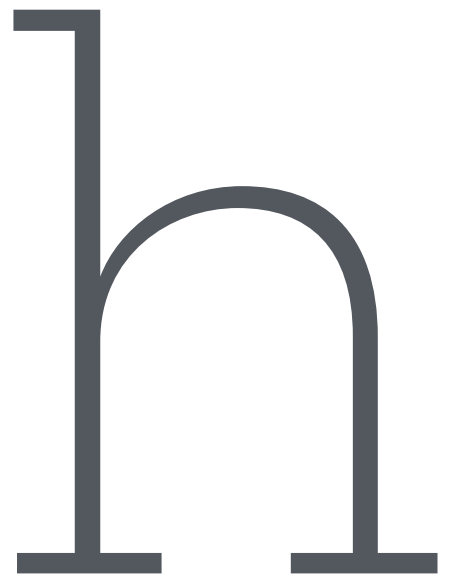


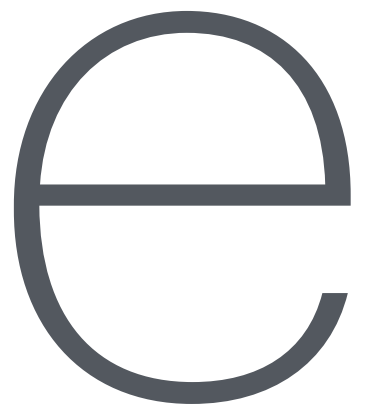


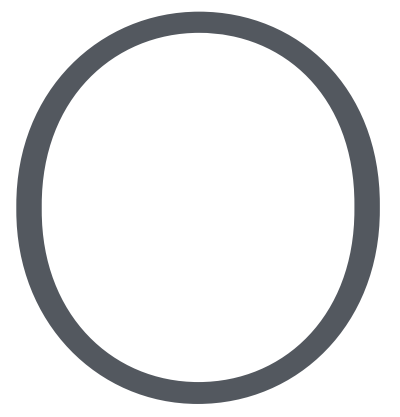


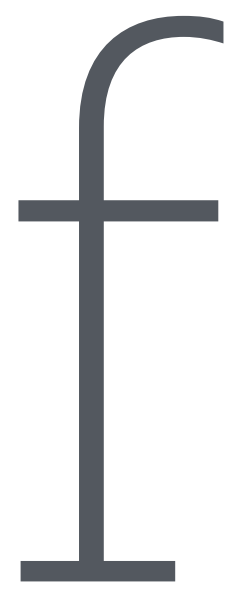


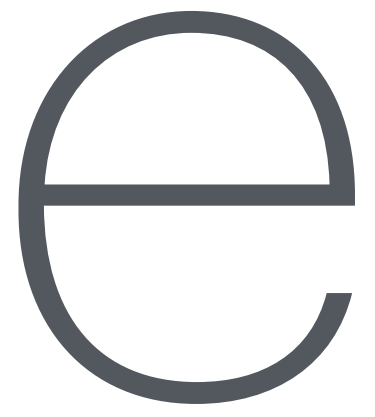


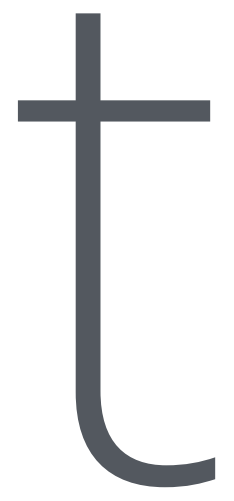


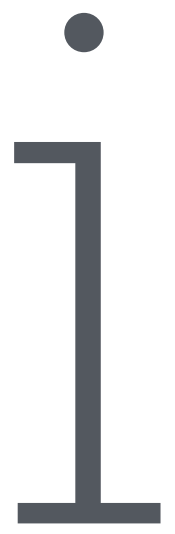


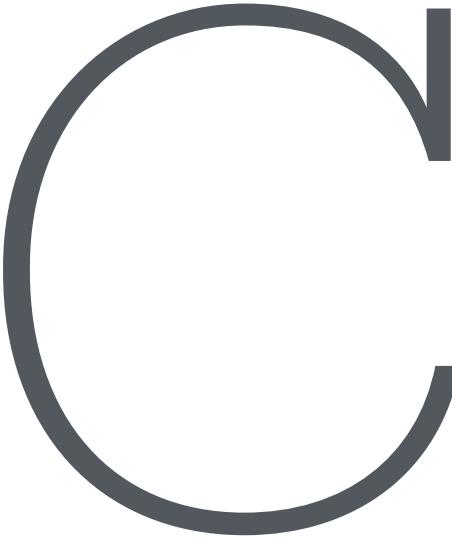


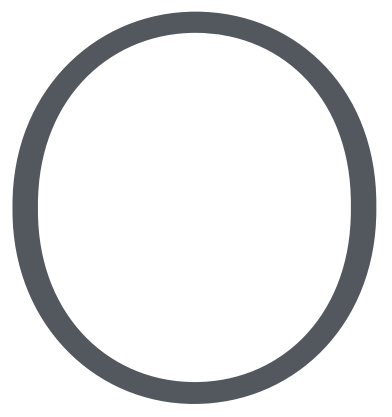


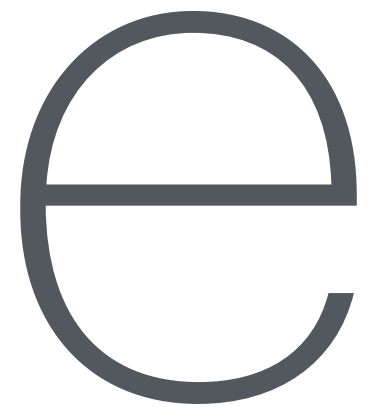


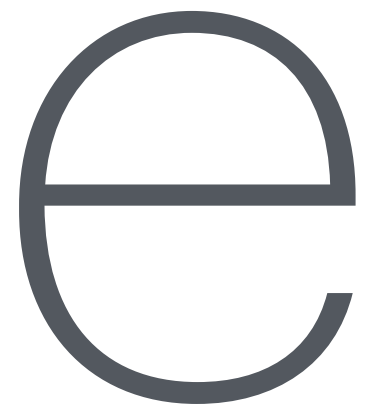


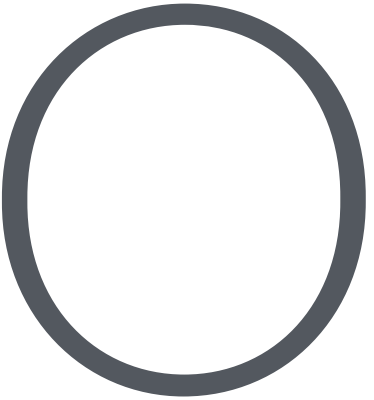


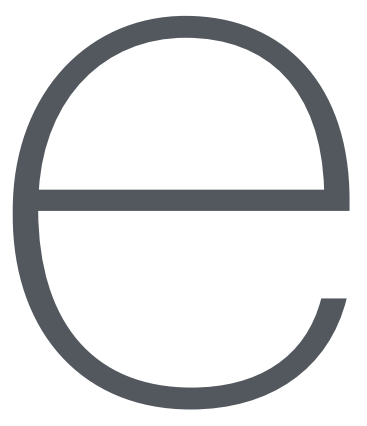


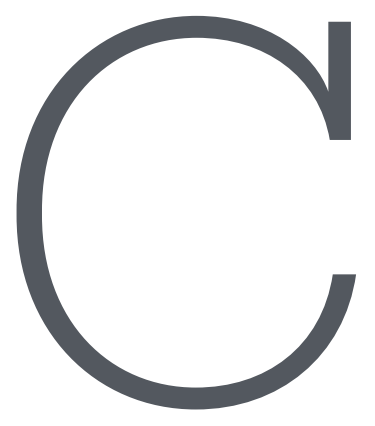


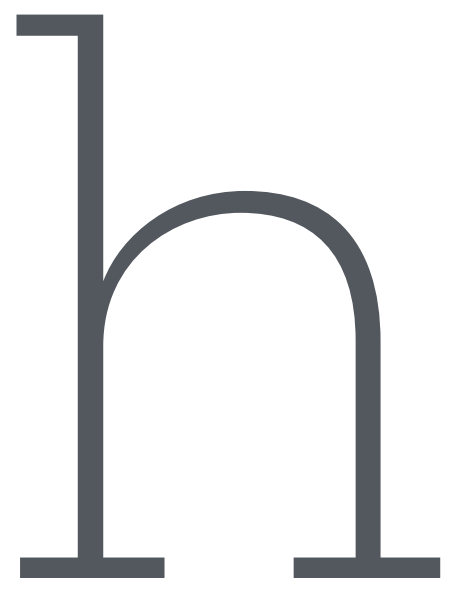


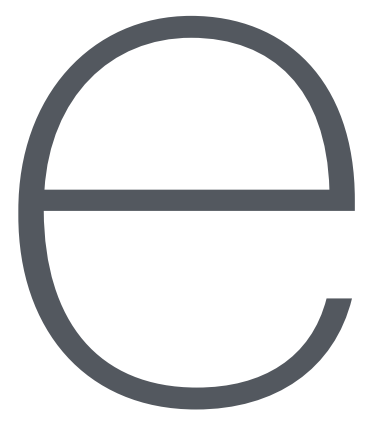


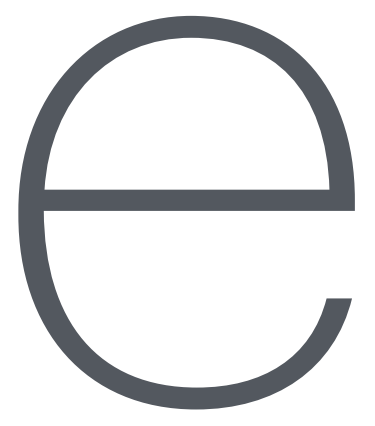


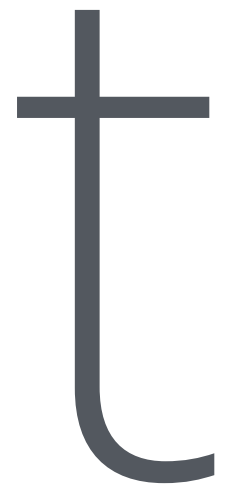


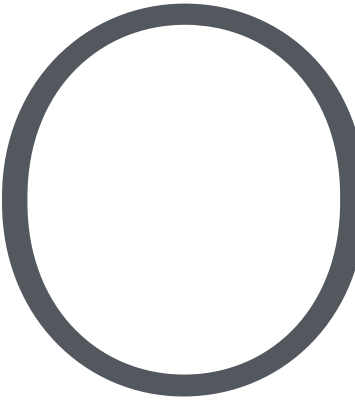


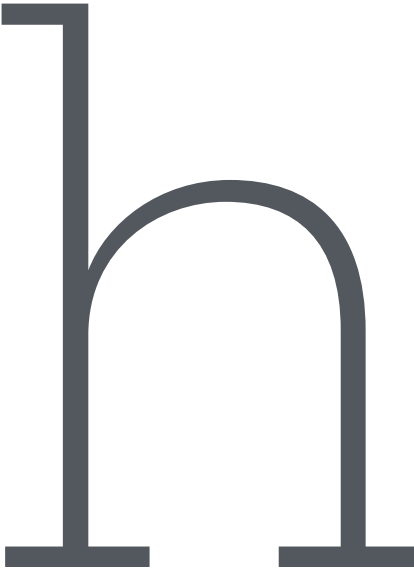


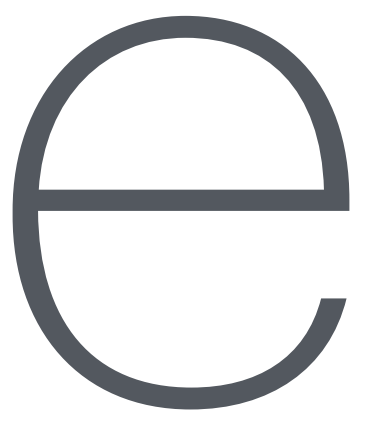


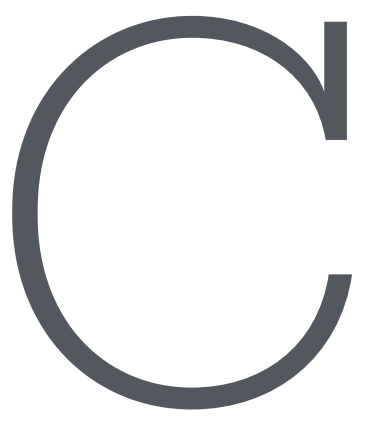


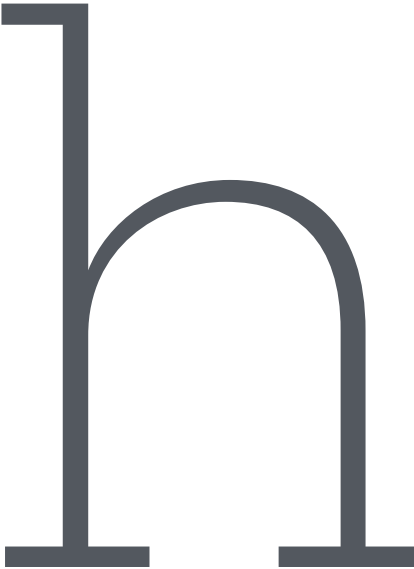


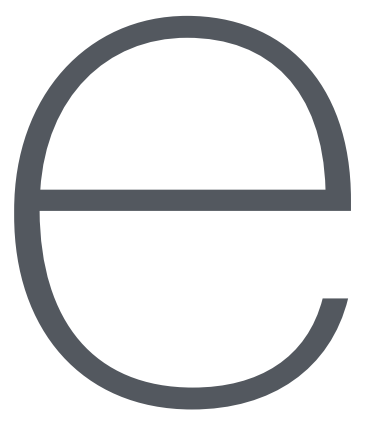


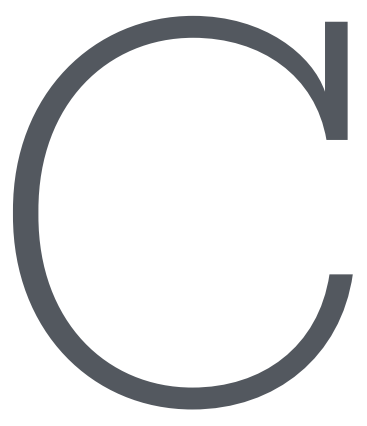


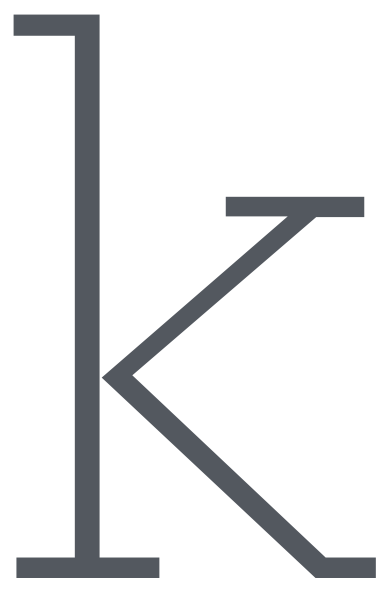










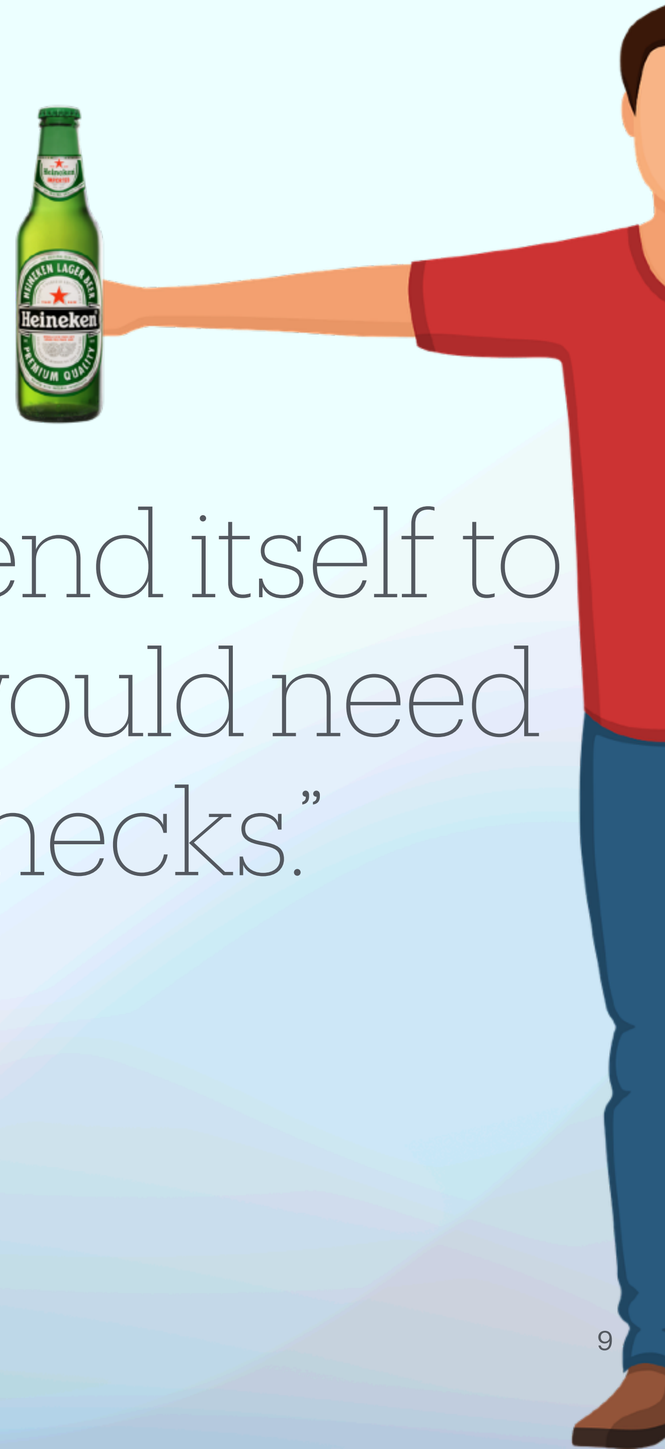


”

9

HEINEKEN LAGER BEER
Heineken
PREMIUM QUALITY

“However, the language does not lend itself to this. Thus memory safety in C++ would need to be achieved through runtime checks.”



"However, the language does not lend itself to this. Thus memory safety in C++ would need to be achieved through runtime checks."

sean@red: ~/projects/circle4/talk

File Edit View Search Terminal Help

```
non-void function does not return a value [-Wreturn-type]
}
^
3 warnings generated.
[  1%] Linking CXX executable c
[100%] Built target circle
sean@red:~/projects/circle4/Rel
sean@red:~/projects/circle4/Rel
[sudo] password for sean:
[100%] Built target circle
Install the project...
-- Install configuration: "Rele
-- Installing: /usr/bin/circle
-- Set runtime path of "/usr/bi
sean@red:~/projects/circle4/Rel
[sudo] password for sean:
Scanning dependencies of target
[  0%] Building CXX object CMak
.o
/home/sean/projects/circle4/src
meration values 'language_kind_
ied' not handled in switch [-Ws
                switch(frontend.o
                ^
1 warning generated.
[  1%] Linking CXX executable c
[100%] Built target circle
Install the project...
-- Install configuration: "Rele
-- Installing: /usr/bin/circle
-- Set runtime path of "/usr/bi
sean@red:~/projects/circle4/Rel
Scanning dependencies of target
[  0%] Building CXX object CMak
riance.cxx.o
[  1%] Linking CXX executable c
[100%] Built target circle
Install the project...
-- Install configuration: "Rele
-- Installing: /usr/bin/circle
-- Set runtime path of "/usr/bi
sean@red:~/projects/circle4/Rel
sean@red:~/projects/circle4/talk$ subl .
sean@red:~/projects/circle4/talk$ xdg-open billion.png
sean@red:~/projects/circle4/talk$
```

~/projects/circle4/talk/safe1.cxx (talk) - Sublime Text

File Edit Selection Find View Goto Tools Project Preferences Help

safe1.cxx

safety.png

File Edit View Go Help

Kinds of memory safety and their solutions

- Lifetime safety - static
  - Borrow checking.
  - A local solution to a non-local problem.
- Type safety (nullptr variety) - static
  - Relocation object model.
- Type safety (union variety) - static
  - Choice types and pattern matching.
- Thread/data race safety - static
  - Send/sync traits.
- Out-of-bounds subscript, divide-by-zero, etc - runtime
  - Panic!

Other unsafe stuff is banned in `safe` contexts.

924 × 607 pixels 84.6 kB 100% 2 / 2

Line 1, Column 1 lifetime 22949 Spaces: 2 C++