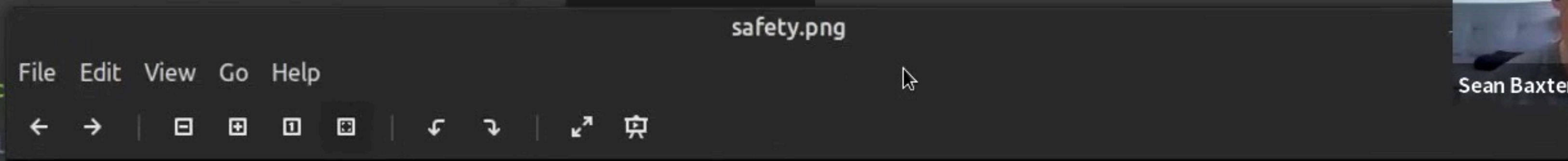




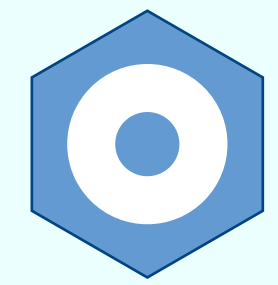
```
...tion does not return a value [-Wreturn-type]
...
generated.
Building CXX executable circle
target circle
projects/circle4/Rel
projects/circle4/Rel
ord for sean:
[100%] Built target circle
Install the project...
-- Install configuration: "Release"
-- Installing: /usr/bin/circle
-- Set runtime path of "/usr/bin/circle" to "/usr/local/lib"
sean@red:~/projects/circle4/Release$ sudo ./circle
[sudo] password for sean:
Scanning dependencies of target circle
[ 0%] Building CXX object CMakeFiles/circle.dir/main.cpp.o
/home/sean/projects/circle4/src/main.cpp:10:10: warning: unused variable 'x' [-Wunused-variable]
    int x = 1;
         ^
1 warning generated.
[ 1%] Linking CXX executable circle
[100%] Built target circle
Install the project...
-- Install configuration: "Release"
-- Installing: /usr/bin/circle
-- Set runtime path of "/usr/bin/circle" to "/usr/local/lib"
sean@red:~/projects/circle4/Release$ sudo ./circle
Scanning dependencies of target circle
[ 0%] Building CXX object CMakeFiles/circle.dir/main.cpp.o
[ 1%] Linking CXX executable circle
[100%] Built target circle
Install the project...
-- Install configuration: "Release"
-- Installing: /usr/bin/circle
-- Set runtime path of "/usr/bin/circle" to "/usr/local/lib"
sean@red:~/projects/circle4/Release$ sudo ./circle
sean@red:~/projects/circle4/talk$ sudo ./circle
sean@red:~/projects/circle4/talk$ xdg-open billion.png
sean@red:~/projects/circle4/talk$
```



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.



Steps Involved