
node
JS
Interactive
NORTH AMERICA
Austin, Texas
November 28–December 2, 2016


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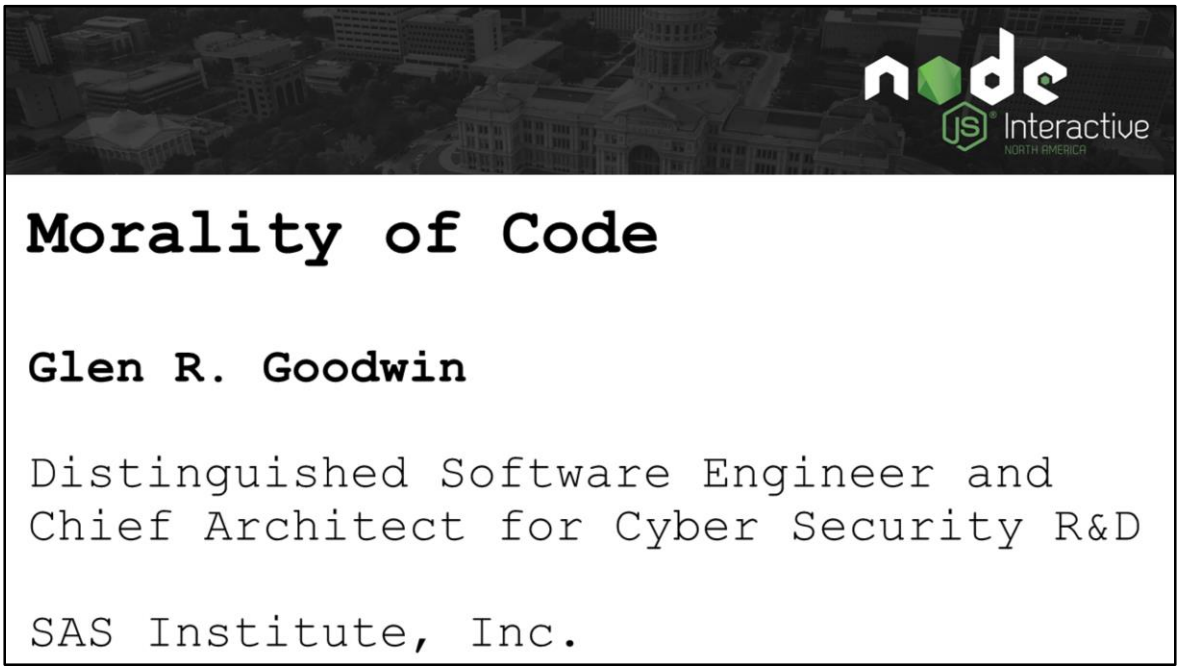
Morality of Code
Glen R. Goodwin - SAS Institute, inc.



Hello.

My name is Glen.

This is the slide where I spend five minutes telling you about me,
But honestly, it doesn't matter.

NEXT: who I am doesn't matter.

Morality of Code

~~Glen R. Goodwin~~

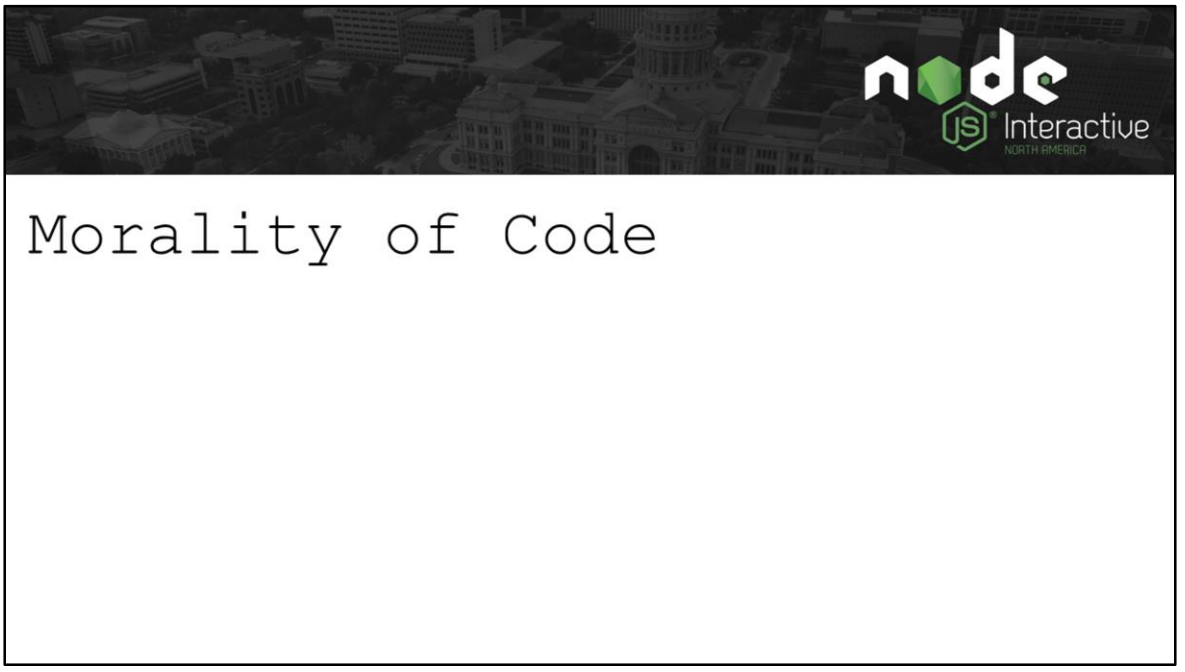
~~Distinguished Software Engineer and Chief Architect for Cyber Security R&D~~

~~SAS Institute, Inc.~~

who I am doesn't really matter.

Instead, what really matters,
at least to me
and hopefully to you as well by the end of this talk,
Is the morality of code.

NEXT: And before we go any further I want to be clear that I'm not here to lecture about my moral opinions or tell anyone what their moral opinions should be.



And before we go any further
I want to be **clear** that I'm **not here to lecture about my moral opinions**
or tell anyone **what their moral opinions** should be.

Instead I'm here to **talk about the idea**
that we, as software engineers,
need to take the time to consider our moral opinions,
whatever they may be,
before and after we write our code.

My goal isn't to tell you what to do,
but to help you find the way to **make your own moral decisions regarding your code**.

Okay, So what do I mean when I say morality of code.

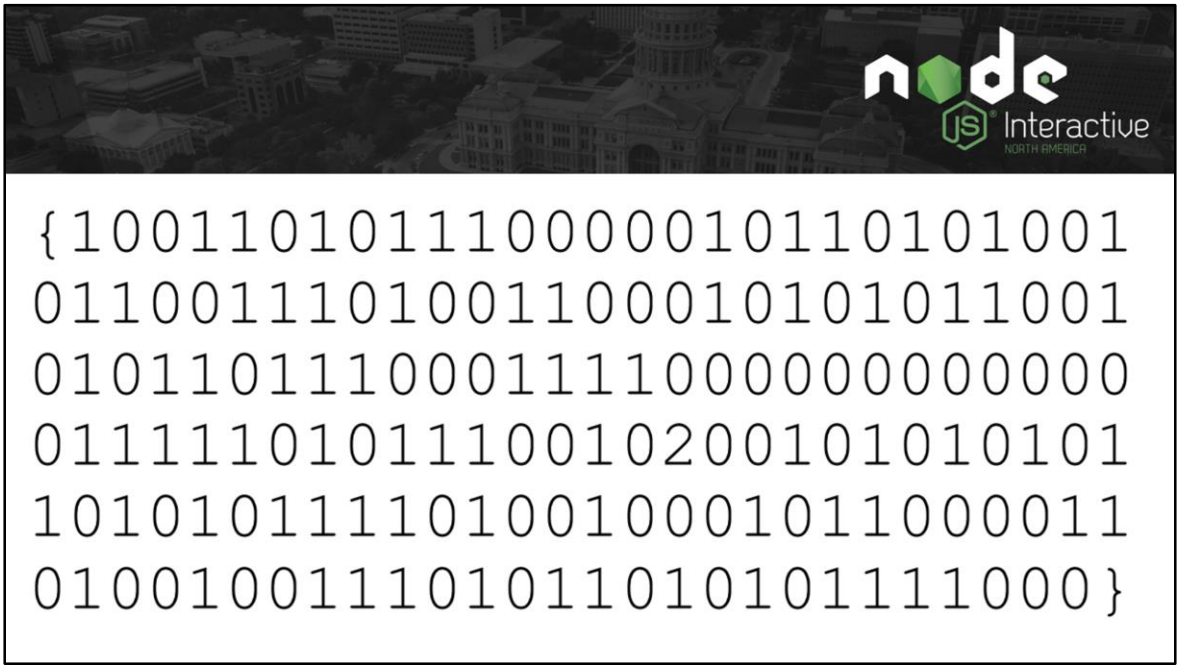
NEXT: That is to say, what morality does a block of code have?

That is to say, what morality does a block of code have?

Of course you might say,
code has no morality,
it's not human.
Its incapable of morality

It's just bits.

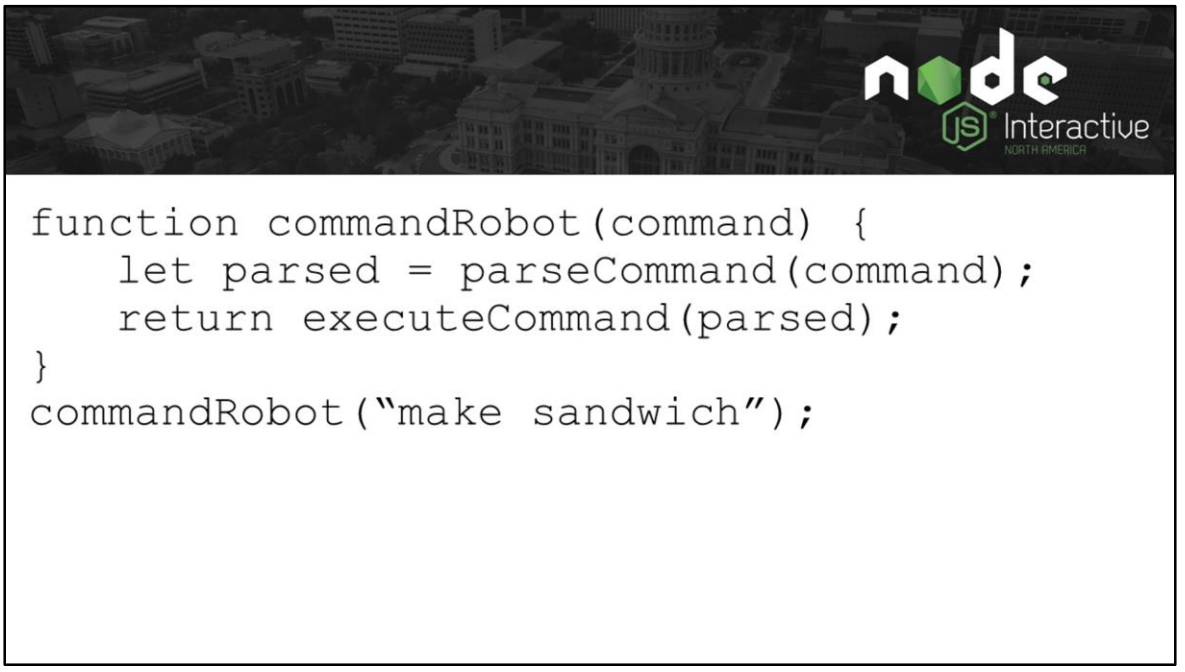
NEXT: And I agree with you.



And I agree with you.

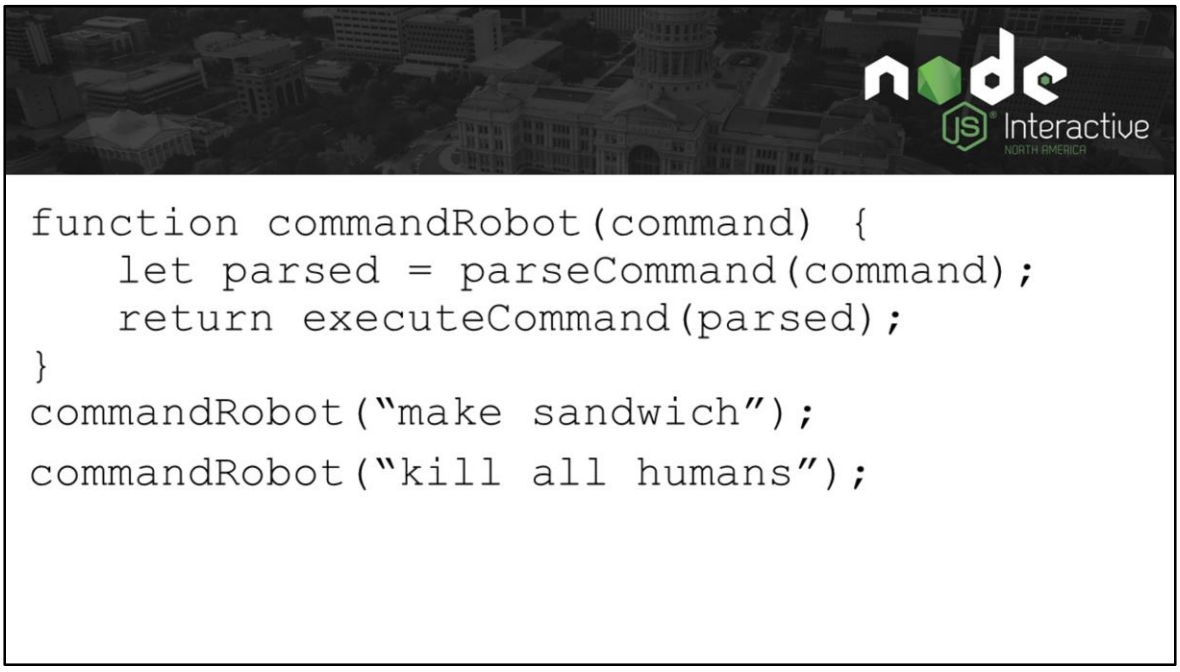
Bits are not the problem,

It's what you do with the bits.
Morality of code isn't about whether or not the bits in and of themselves are moral.
NEXT: Instead it's about how those bits are used.



Instead it's about how those bits are used.
It's about what our intent is in aligning those bits into certain patterns.

It's about understanding what happens
when other people consume our code.
NEXT: And how our own personal morality shapes the code itself.

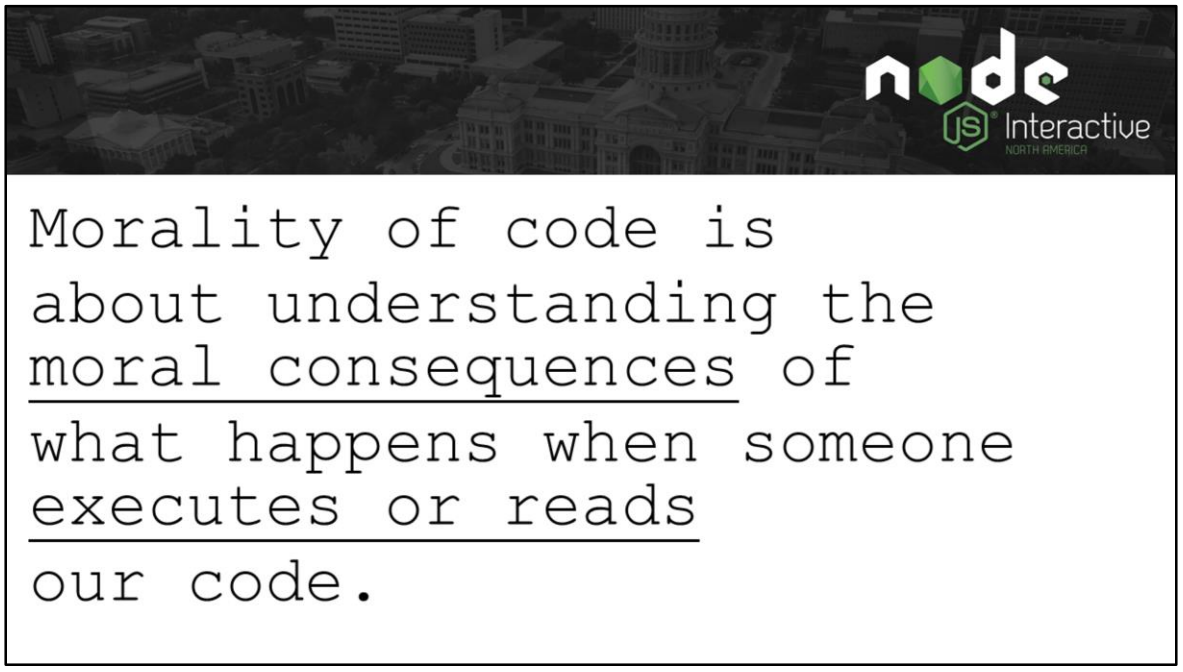


And how our **own personal morality shapes** the code itself.

[pause]

So here is the **starting definition** I suggest we use...

NEXT: Morality of code is about understanding the moral consequences of what happens when someone executes or reads our code.



Morality of code is about understanding the moral consequences of what happens when someone executes or reads our code.

[pause]

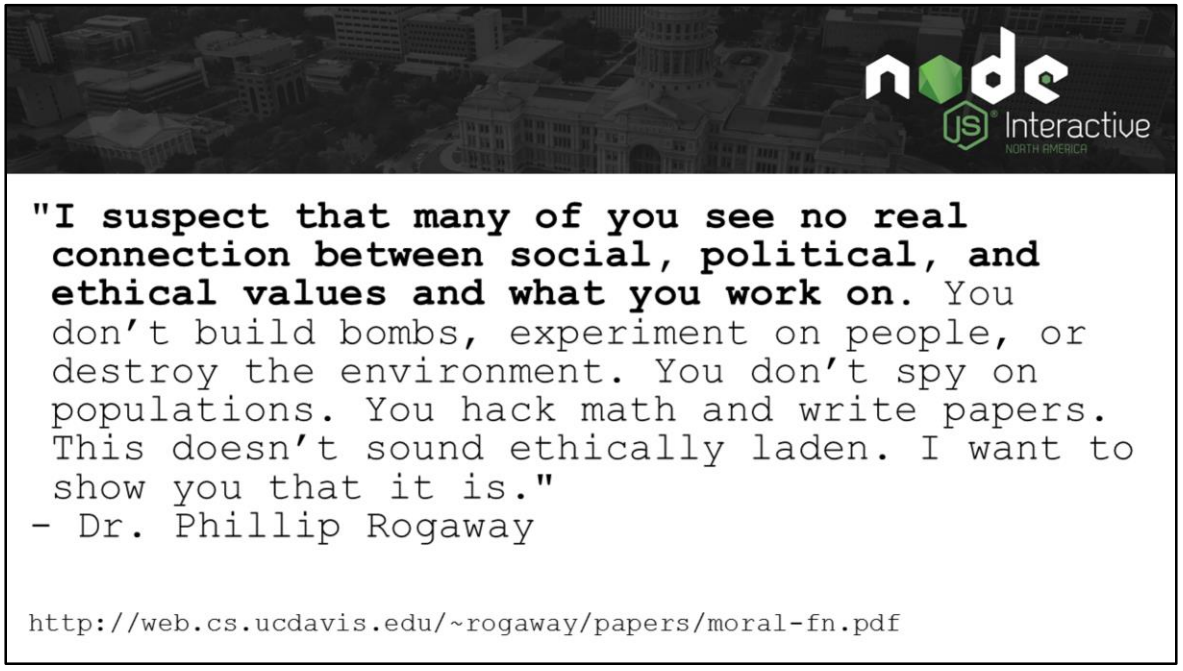
NEXT: There is a paper in the Crytographic Community

"I suspect that many of you see no real connection between social, political, and ethical values and what you work on. You don't build bombs, experiment on people, or destroy the environment. You don't spy on populations. You hack math and write papers. This doesn't sound ethically laden. I want to show you that it is."
- Dr. Phillip Rogaway

http://web.cs.ucdavis.edu/~rogaway/papers/moral-fn.pdf

There is a paper in the Crytographic Community
entitled "The Moral Character of Cryptographic Work"
That I think applies equally as well here.
The author, Dr. Rogaway, wrote

NEXT: "I suspect that many of you see no real connection between social, political, and ethical values and what you work on."



"I suspect that many of you see no real connection between social, political, and ethical values and what you work on."

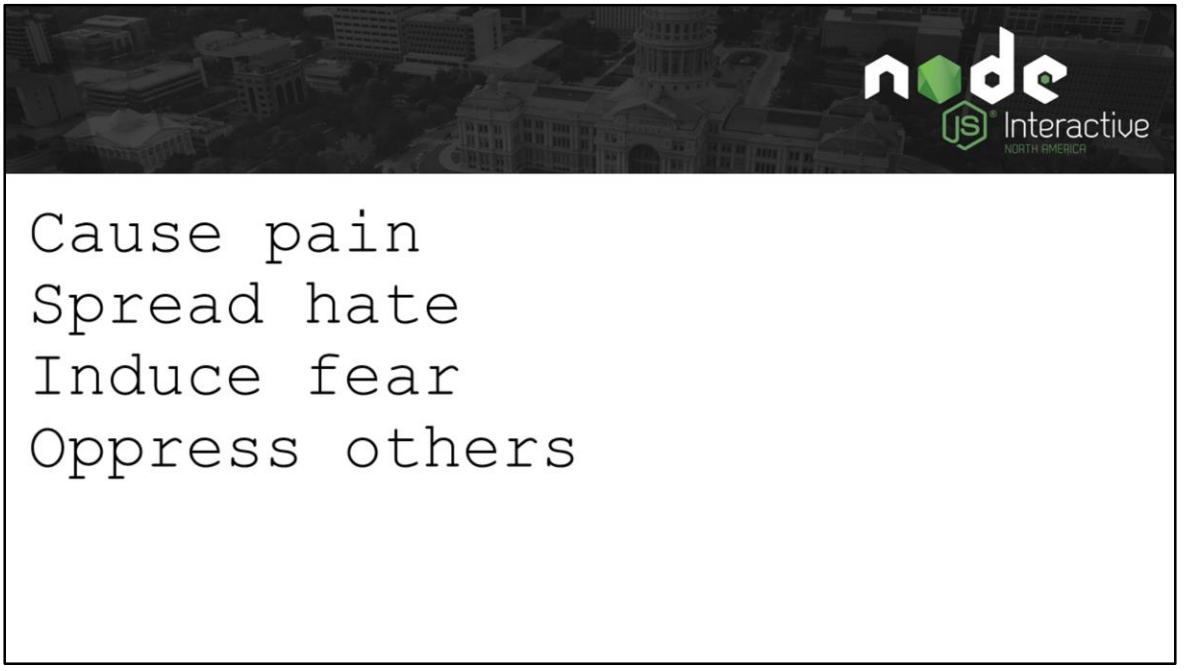
And he's right.

Most of us never really even think about this stuff.

We never consider the moral consequences of the code we are writing.

We never ask ourselves can this code be used to

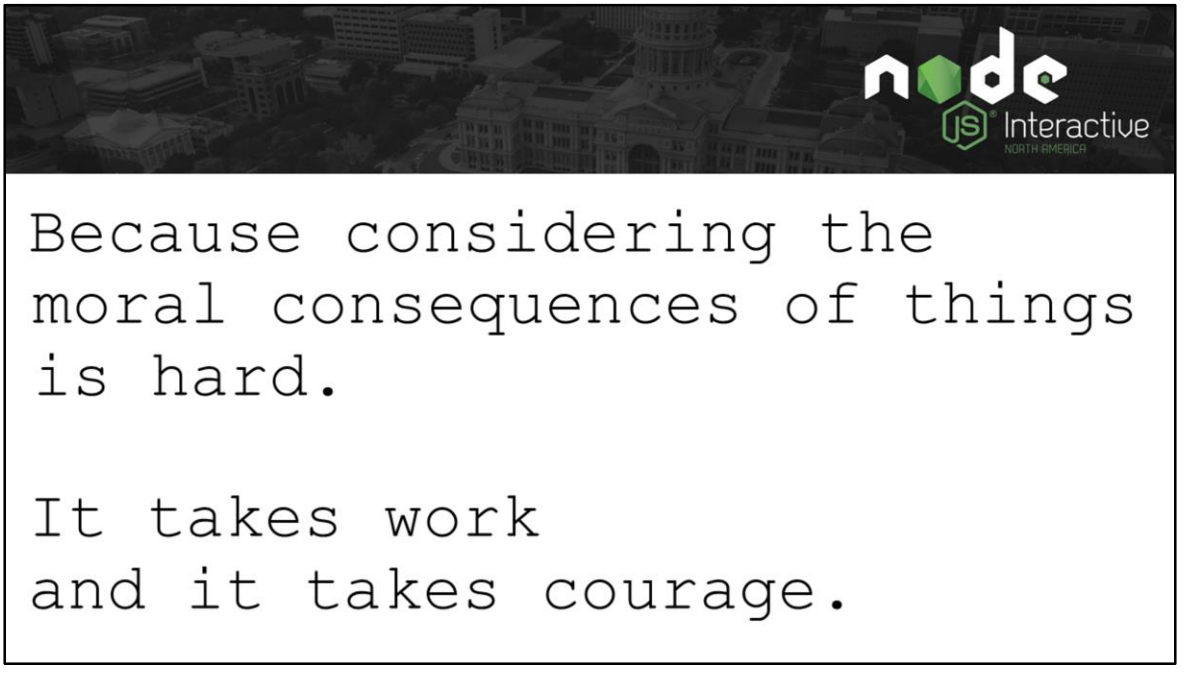
NEXT: Cause Pain, Spread Hate, Induce Feat, or Oppress other



Cause Pain
Spread Hate
Induce Fear
or Oppress others

We never ask ourselves these questions

NEXT: Because considering the moral consequences of things is hard.



Because considering the moral consequences of things is hard.

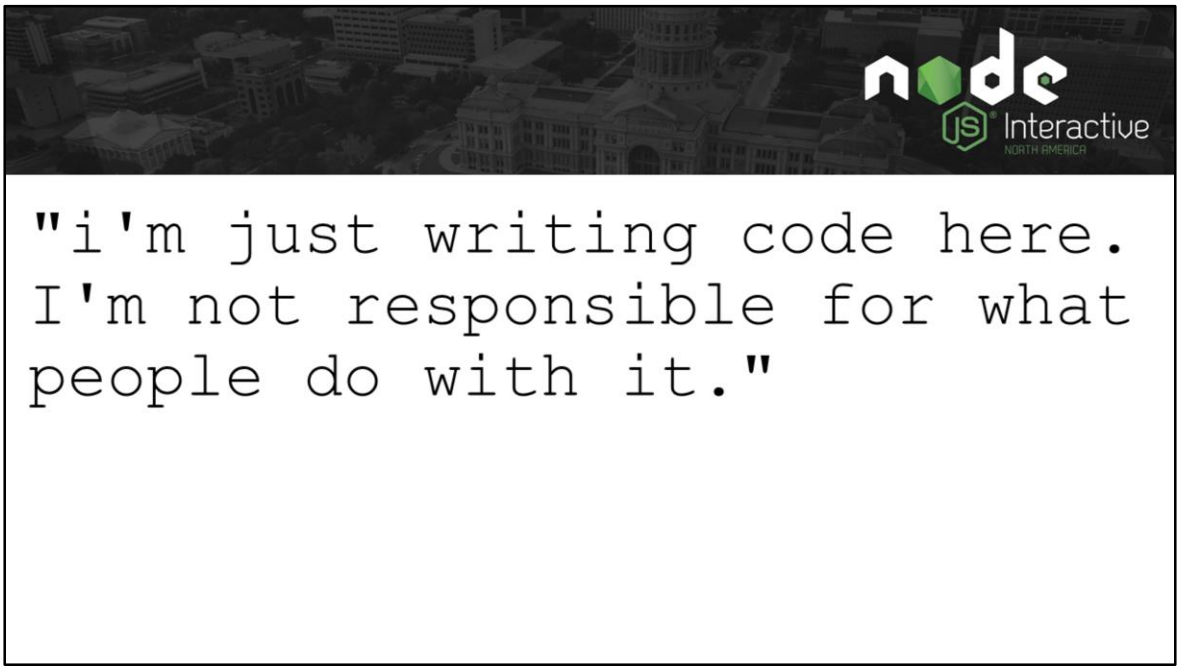
It takes work
and it takes courage.

In fact, instead of confronting these topics

we come up with some convenient shortcuts,
lies if you will, that we tell ourselves and others
that enable us to avoid facing this subject.

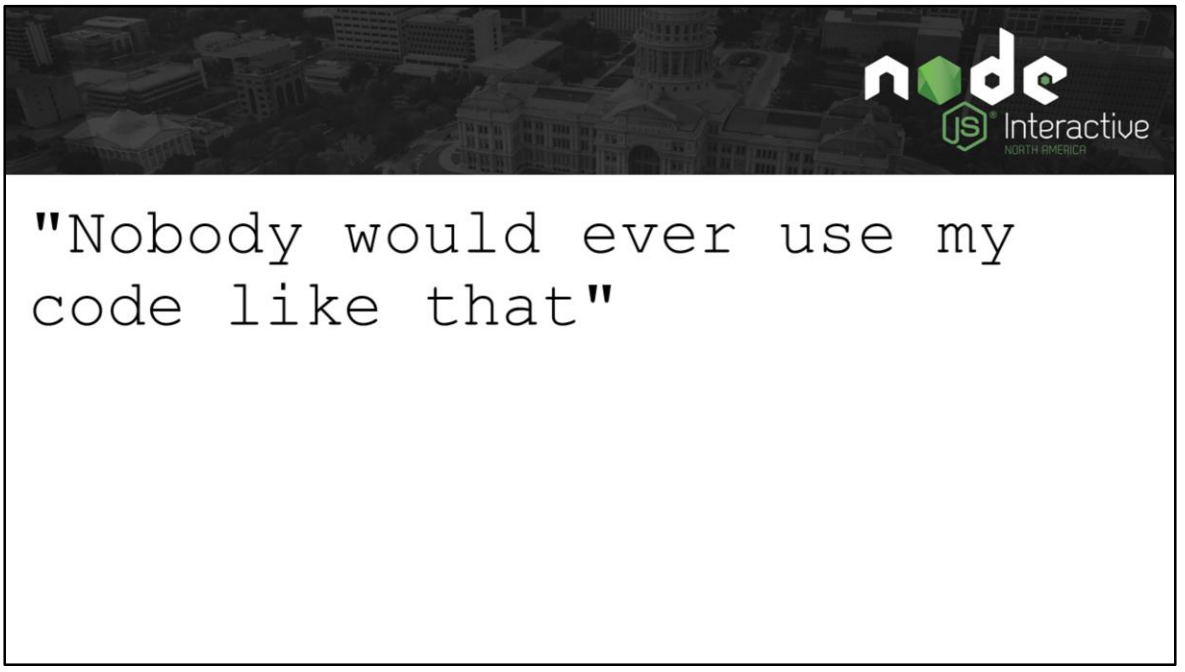
Things like…

NEXT: "i'm just writing code here. I'm not responsible for what people do with it.“



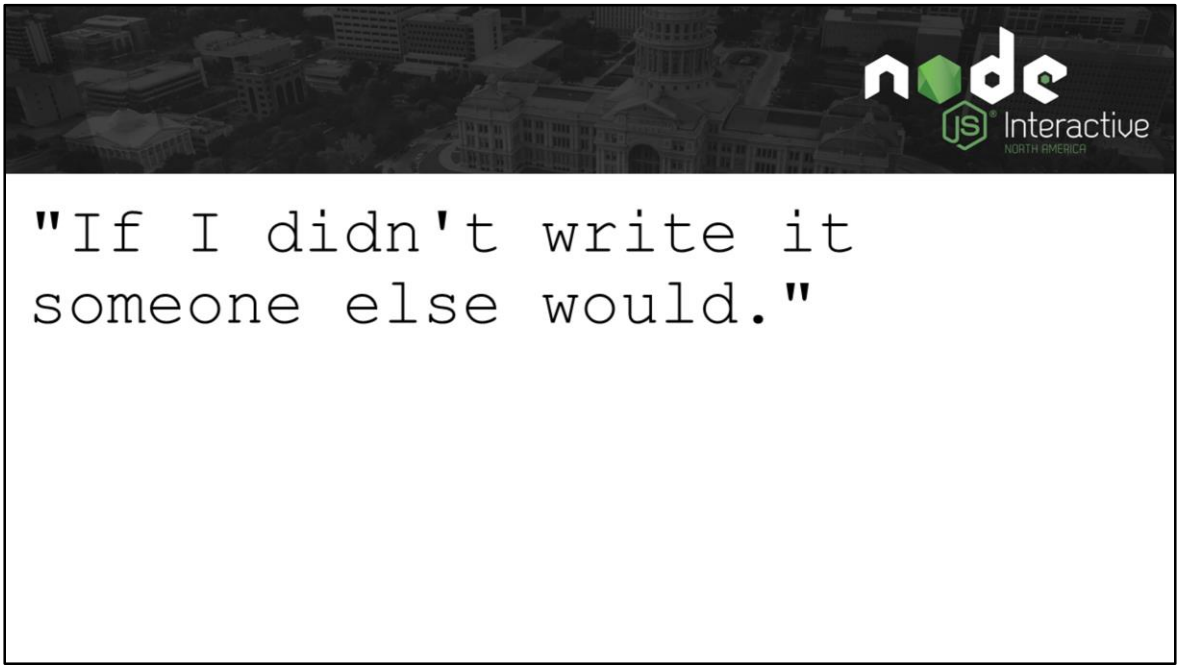
"i'm just writing code here. I'm not responsible for what people do with it.“

NEXT: "Nobody would ever use my code like that“



"Nobody would ever use my code like that“

NEXT: "If I didn't write it someone else would.“

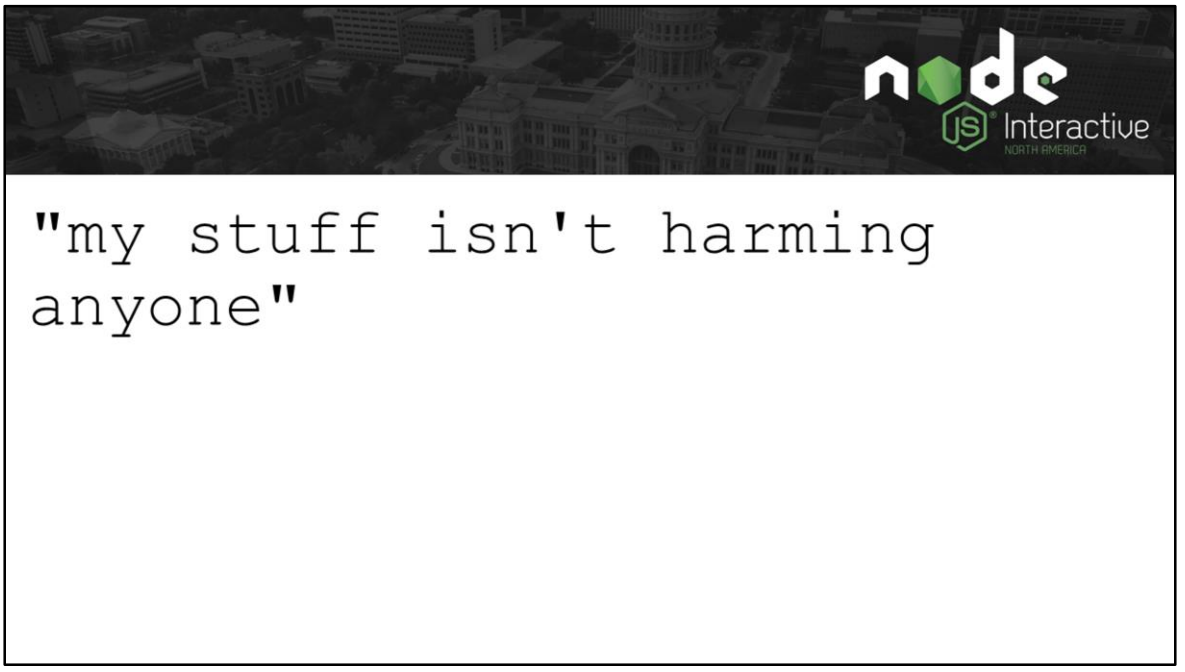


"If I didn't write it someone else would.“

These little platitudes let us sidestep the moral considerations of what we do.

But the little white lie we most commonly tell ourselves is this one…

NEXT: "my stuff isn't harming anyone“

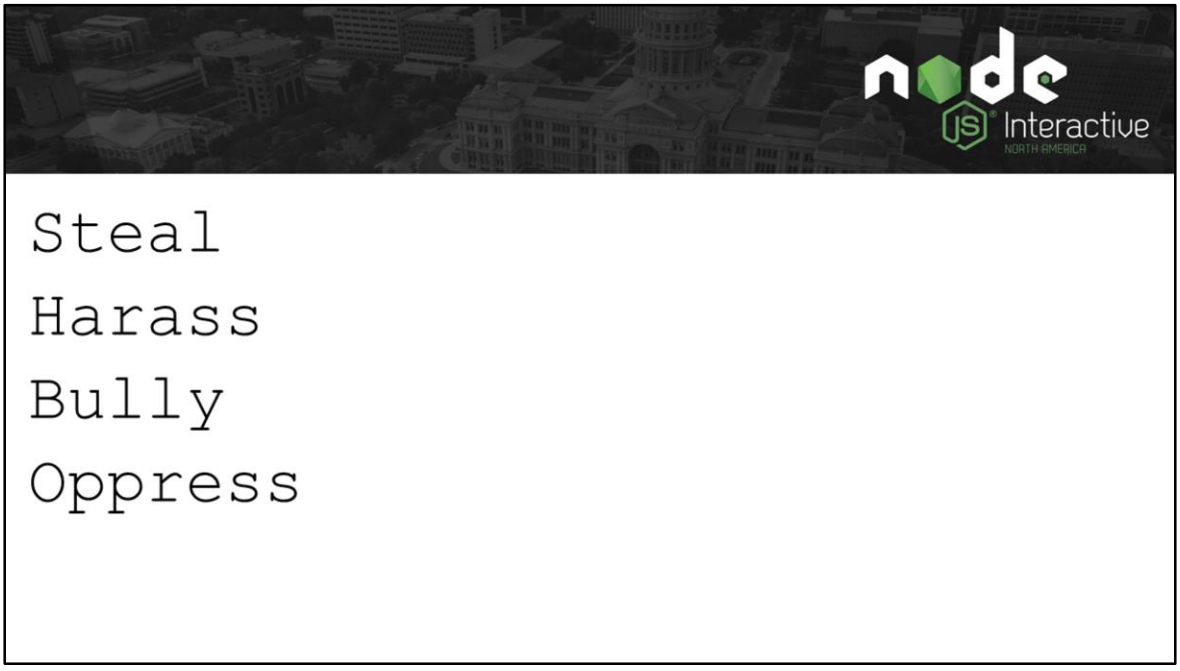


"my stuff isn't harming anyone“

Listen, we all want to believe that **our code** is **just code**
and we put it out there into the universe
and it is only used to make sunshine and rainbows.

Except the reality is that our code is out there
For anyone to use
To do whatever they want.

NEXT: To Steal, To Harass, To Bully, To oppress…



To Steal
To Harass
To Bully
To oppress…

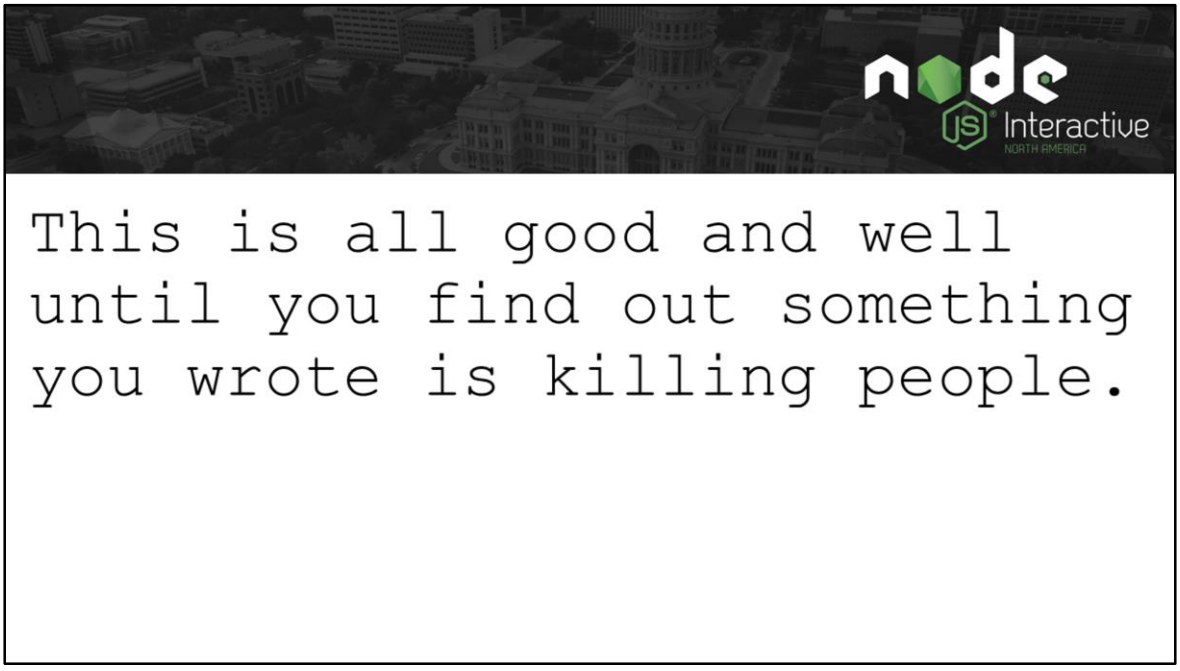
Tell me a group that you are morally opposed to and I bet I can show you an example of them using common tools.

I went to the website of the **literally the first hate group** I could think of,
and I'm intentionally not naming names here,
and I found that they were using wordpress…
They were using jquery…
They were using Google Analytics…

They all use the same coding tools we use, the same languages, the same package managers, the same libraries.

But something deep inside of us wants to brush this off, ignore it and pretend it doesn't exist.

NEXT: This is all good and well until you find out something you wrote is killing people.



This is all good and well until you find out something you wrote is killing people.

[pause]

I'm sure that sounds a little overly dramatic to some of you.
You might feel like I am playing this up a bit.

But realize that this is just your brain trying to avoid thinking about this subject
Because this is hard stuff.
And ultimately nobody wants to believe
that we are participants in other people suffering.

NEXT: Infamous JavaScript community satirist, Jenn Schiffer recently talked about this in a blog post she wrote…

Infamous JavaScript community satirist, Jenn Schiffer recently talked about this in a blog post she wrote…

"I think it's safe to say that every tool we create has the potential to be used as a vehicle for harassment."

[pause]

once you share your code for others to use, whether commercially or open source, there is no limit to what other people can do with it.

And by not weighing the moral consequences of our work
we are allowing,

NEXT: Permitting, encouraging even,
our code to be used in ways that we as individuals and as a community may find reprehensible.

We are allowing, permitting, encouraging even, our code to be used in ways that we as individuals and as a community may find reprehensible.

Permitting, encouraging even,
our code to be used in ways that
we as individuals
and as a community
may find reprehensible.

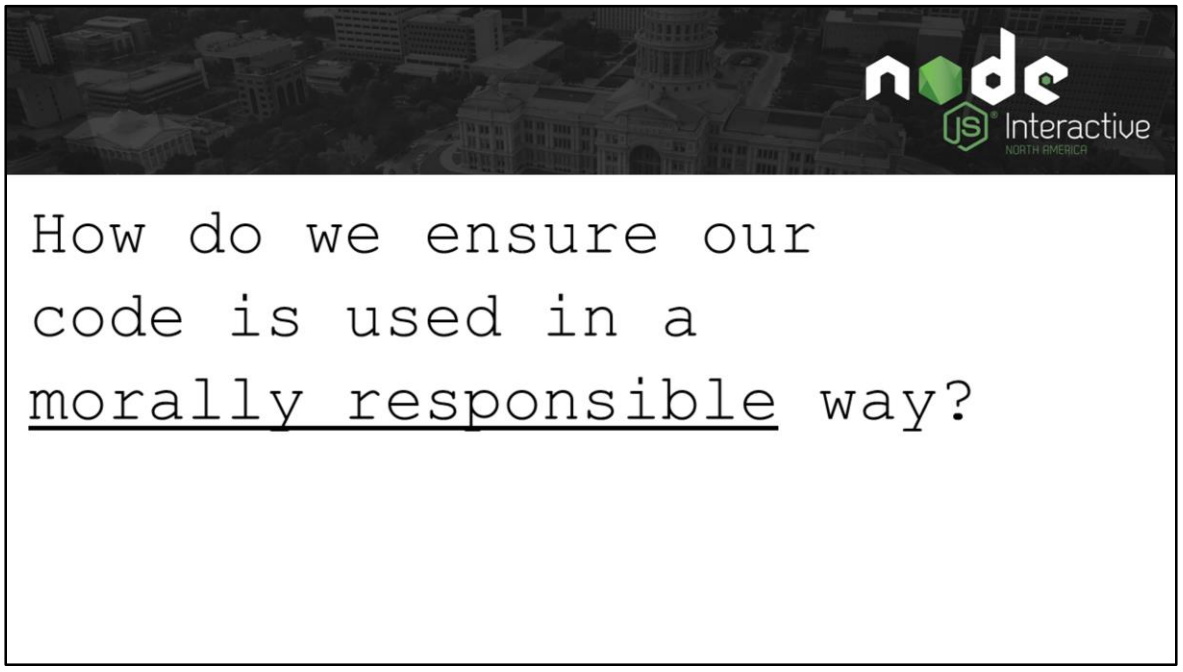
We cannot rely on the users of our code to be doing the right thing,
however we define that.

Therefore we must take steps to try and ensure
that they aren't doing the **wrong thing**.

[pause]

So how do we do that?

NEXT: How do we ensure our code is used in a morally responsible way?



How do we ensure our code is used in a morally responsible way?

Let's start by looking at what we mean by "morally responsible".

[Pause]

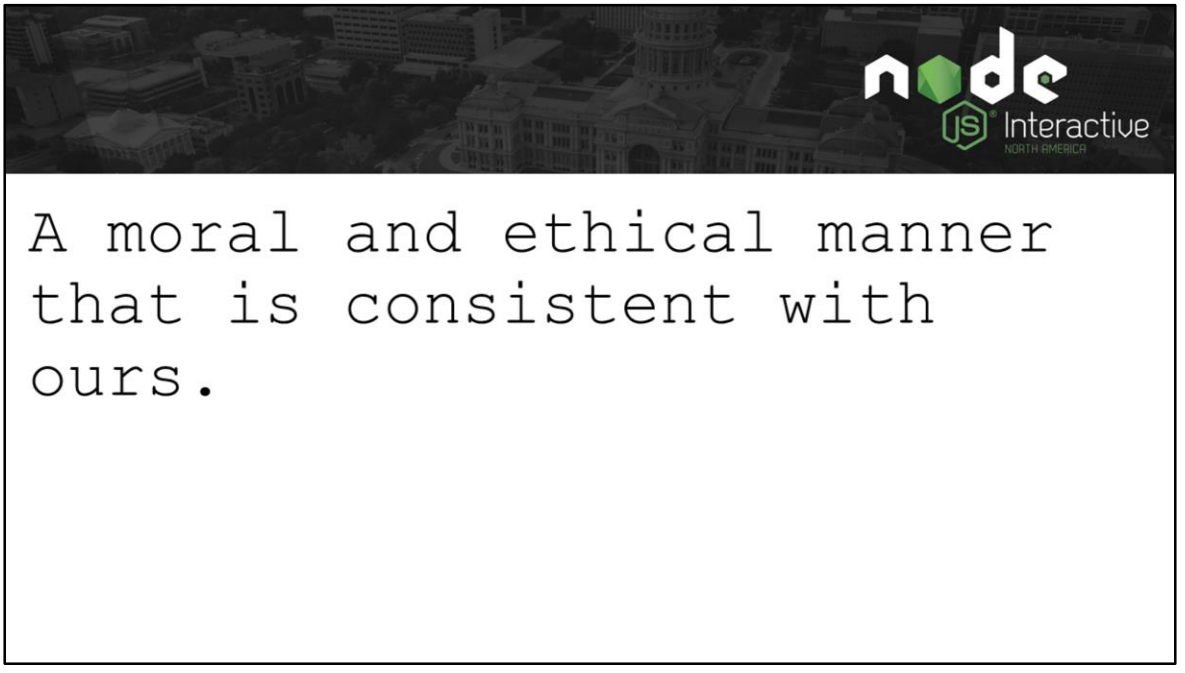
To me morally responsible means
in alignment with my moral and ethical opinions.

Of course, Your moral and ethical opinions are different than mine.
each of us comes with our own morality.

To be morally responsible, means to act in a manner consistent with **our** opinions.

What we want is for the **users of our code** to behave in a moral and ethical manner **that is consistent with ours.**

NEXT: This the expectation we have when we release our code into the wild.



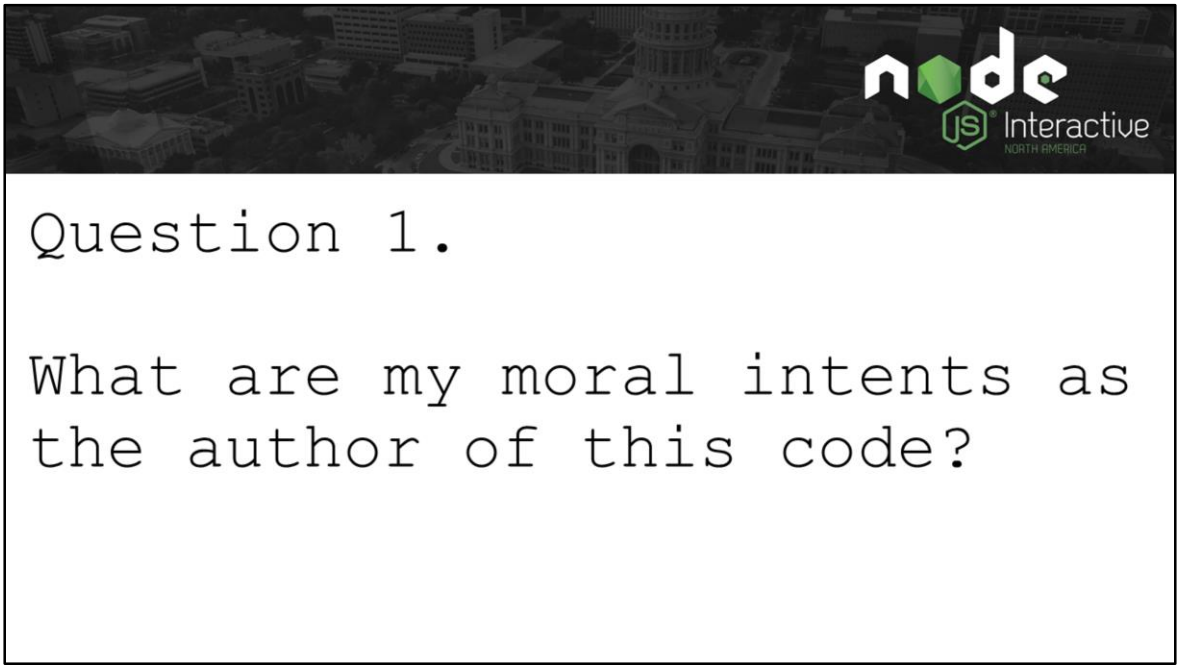
This the **expectation** we have when we release our code into the wild.
That our code is being used in a **morally consistent manner to our own** and not contrary to it.
To use our code otherwise would be to use it in a **morally irresponsible fashion**.
This is what we mean by **morally responsible**.

[pause]

Now, with that in mind we can begin to examine our code
To understand the moral opinions
within the code…

I propose you do this by asking yourself four questions...

NEXT: Question 1: What are my moral intents as the author of this code?



Question 1: What are my moral intents as the author of this code?
That is to say, what morality am I bringing to the code itself.

If I were to write a program, for example, for engaging a **distributed denial of service attack**
my reasons for writing it may have moral implications.

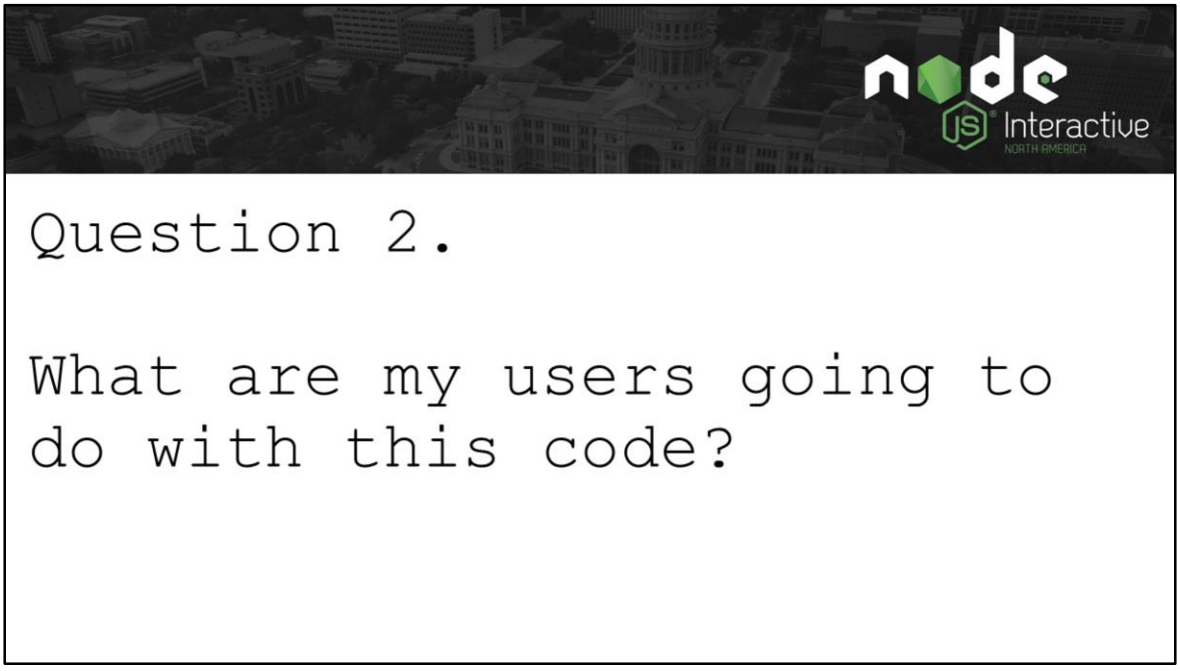
Am I writing it for testing how resilient my servers are?
Or am I writing it to get back at someone I'm angry at.

This is my moral intent, my moral purpose in writing the code

[pause]

Second... What are my users going to do with this code?

NEXT: In order to understand the moral implications of what your users do with your code...



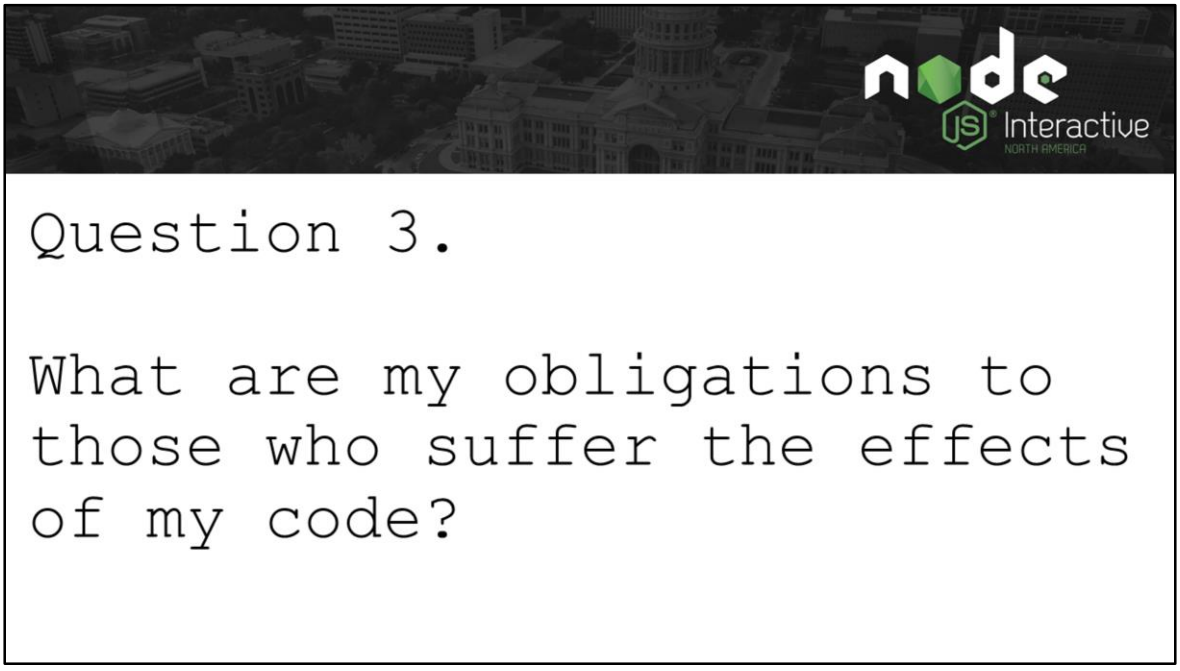
In order to understand the **moral implications of your code...**
you first need to understand **what can be done** with your code.

So challenge yourself to imagine all the possible scenarios,
all the ways your code can be used.
For good and for evil…
This kind of thought experiment might be hard, it might take a while. It might be really easy.
I think it depends largely on the scope of what you are writing.
And the audacity of the idea you are trying to implement.

Once you understand **what can be done with your code**, you can ask yourself **the third question**...

What are my obligations to those who suffer the effects of my code?

NEXT: See, the users of your code are not really who you need to worry about.



See, the users of your code are not really who you need to worry about.

If I write a twitter bot library that just replies to tweets,
It is the user of the library who decides how to direct the twitter bot.

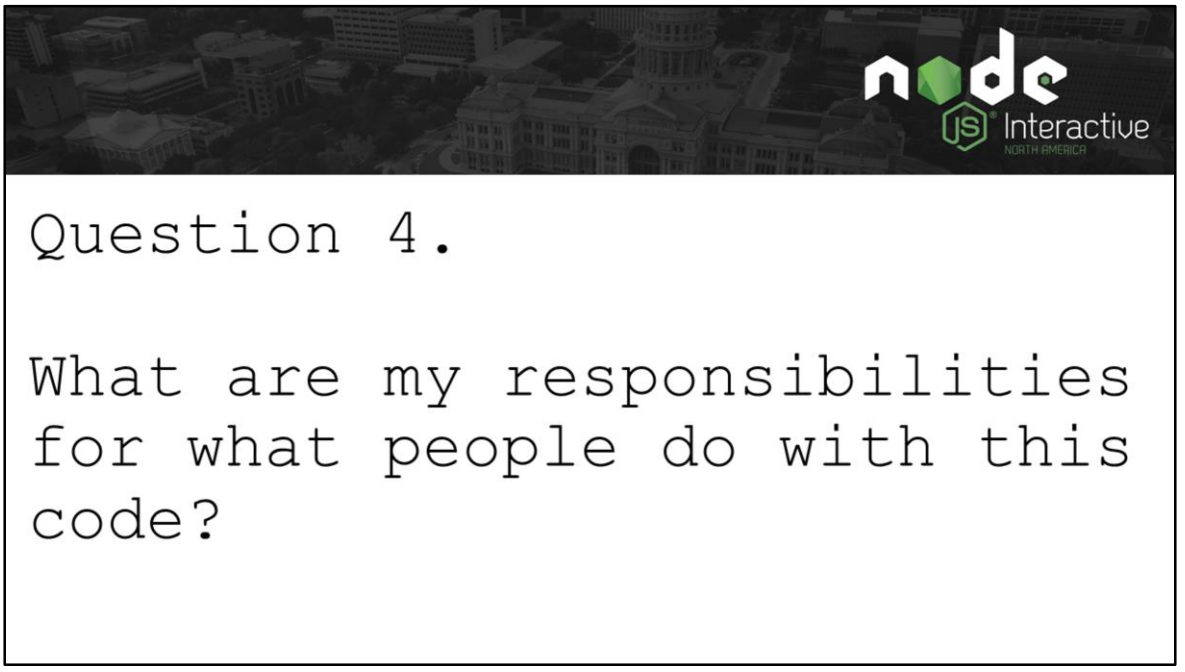
The user of the library **is not the target** of the library.
The target is whomever that twitter bot is **aimed at...**

the recipients of your code are those who suffer the consequence of it.

So how do you feel about the people being targeted by your code,
can you empathize with them?
Are they being wronged?
Once you know how you feel about these people, you can ask yourself the final question...

What are my responsibilities for what people do with this code?

NEXT: Both morally and legally.



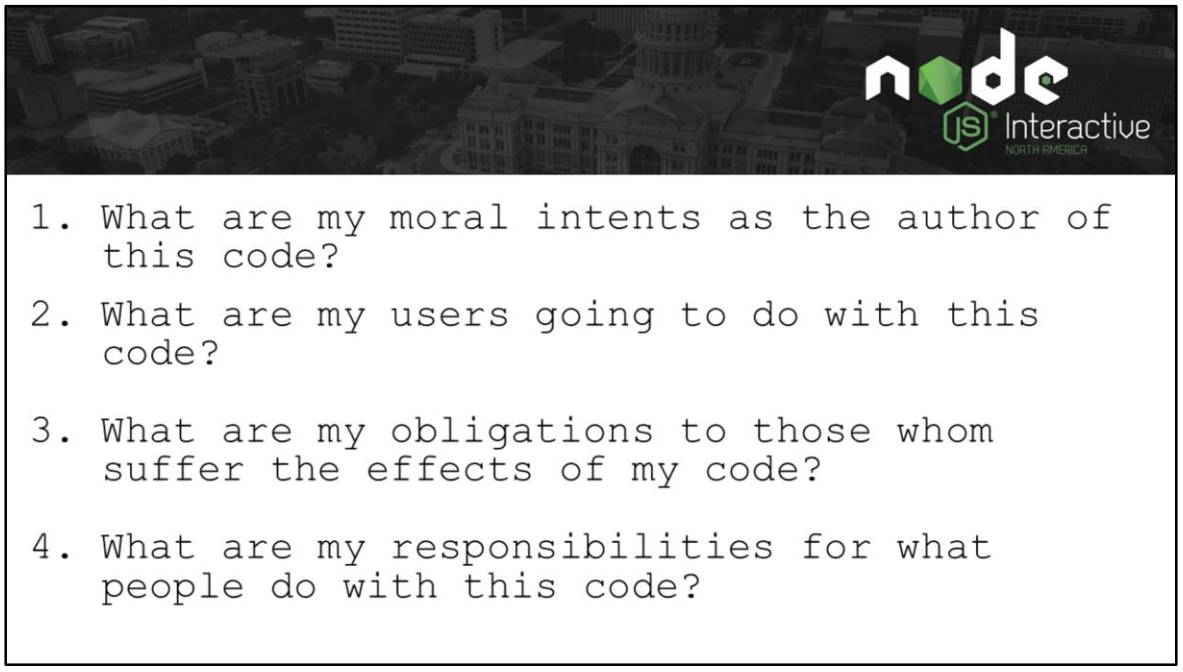
Both morally and legally.

Do I have a **moral obligation** to protect them from using
My code to **hurt** or to **harm** or to **shame** or to **harass**?

Do I have a legal obligation?

How do I protect myself,
and much more importantly,
How do I protect others?

NEXT: I believe by examining our code through the lens of these four questions



I believe by examining our code through the lens of these four questions
Helps me, helps us, understand the moral impact our code can have on other people.

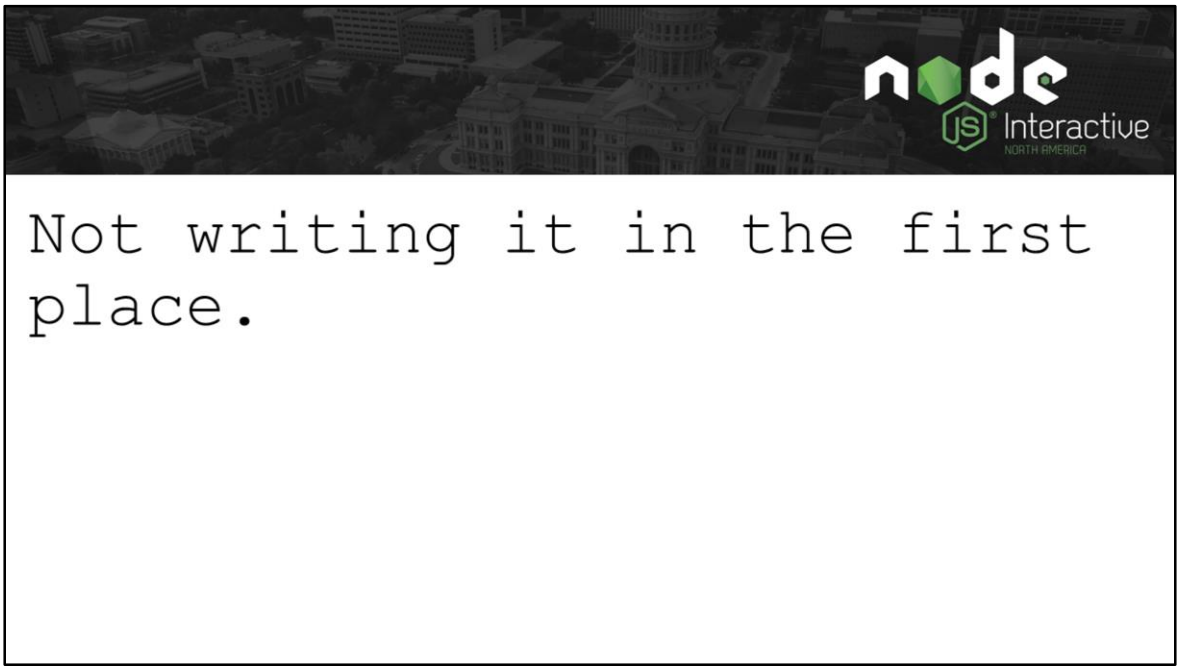
And once you understand that, you can begin to think about **how to manage it**.

[pause]

So here are some thoughts on how you can manage
how others use your code…
And this is not an exhaustive list,
just some options for you to consider.

For example…

NEXT: Consider… Not writing it in the first place.



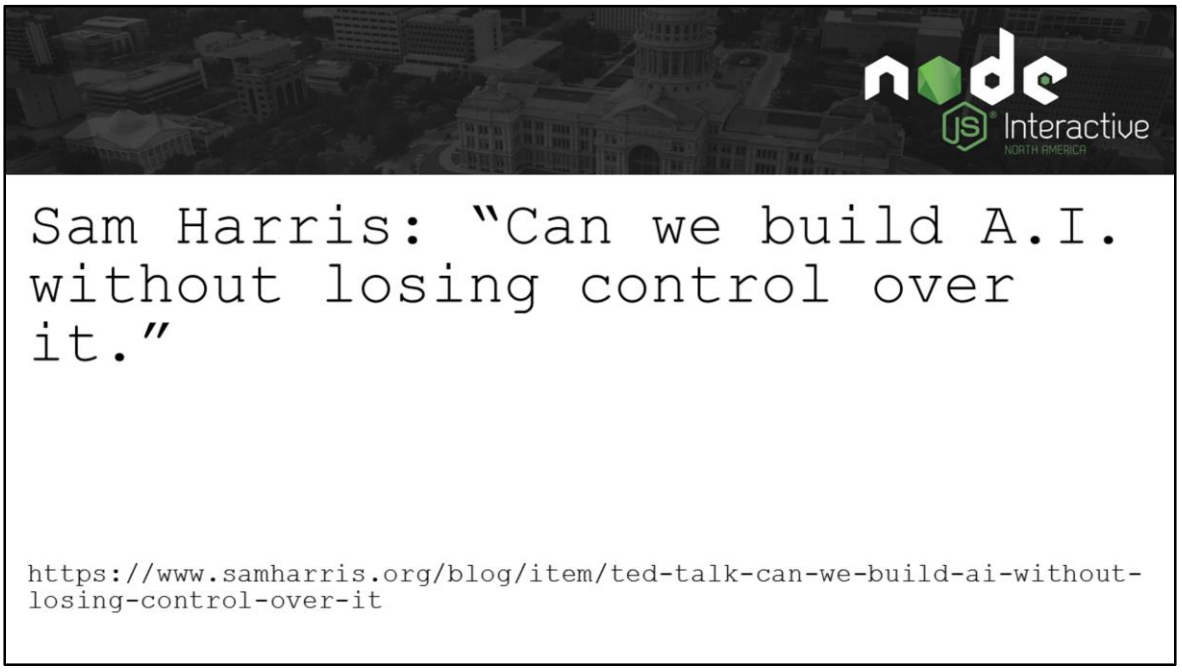
Not writing it in the first place.

Now, I'm not advocating we all stop writing code.
But **maybe for some things**,
maybe it's **better** if they are **never written at all**.

All I'm asking is that **before you write it**,
think about whether or not is should be written

In 2016 futurist Sam Harris
Gave a TED talk entitled:
Can We Build AI without Losing Control over it.

NEXT: In it, he argues not that we don't try to build AI,



In it, he argues **not that we don't try to build AI**,

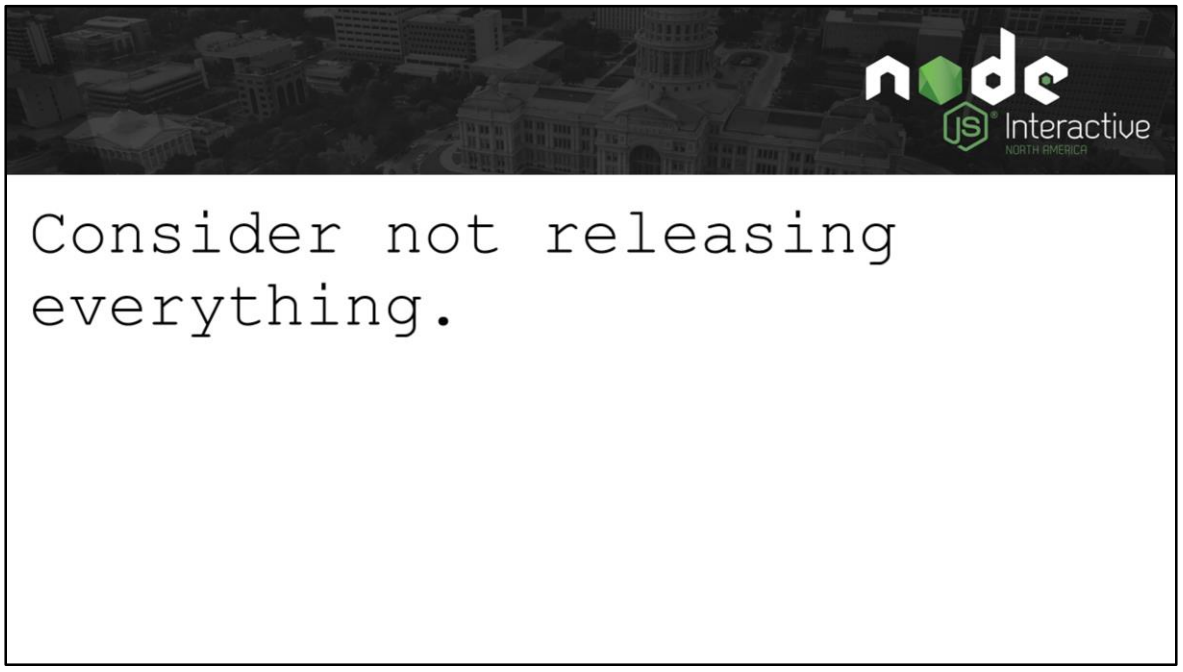
but that we first must develop
the **ethical** and **moral understanding**
necessary **to do it safely**.

Maybe that's the responsible thing to do here.

Don't give up, but **first understand the moral impact** of what we are doing
And ask yourself i**s this right** or **is this wrong**.

Now, if you absolutely must write it...

NEXT: Consider not releasing everything.



Consider not releasing everything.

Again, don't get me wrong,
I love the open source movement.
I **participate** in it **just like everyone else here** does.

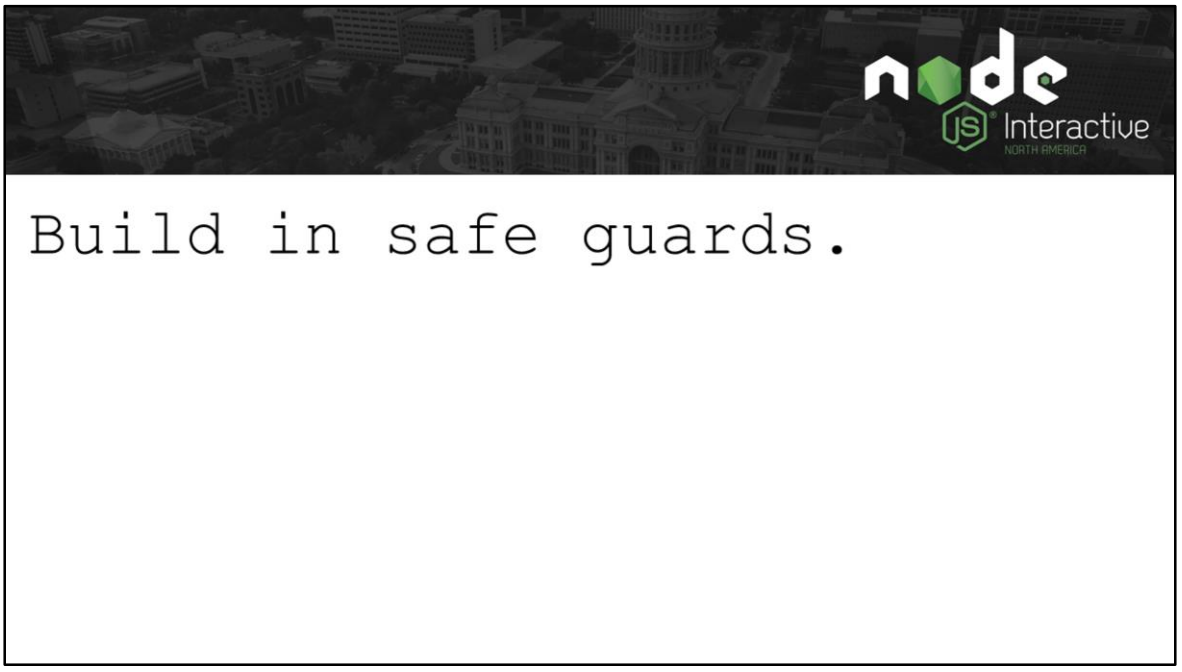
But **maybe we don't need to release every little thing** we write to github.
Maybe some times we need to **keep some code to ourselves**.

It **falls to us** to be the **gatekeepers** that **prevent bad, harmful, malicious code**
From **being exposed** to the **greater world**.

[pause]

Of course, if you really have your heart set on sharing...

NEXT: Build in safe guards.



Build in safe guards.

Write code around your code that **actively works**
to **prevent the usage you deem inappropriate**.

Of course, we know that **anything can be circumvented**
and in JavaScript code is **easy to edit and disable**.
But again, at least you are **trying to be responsible**.

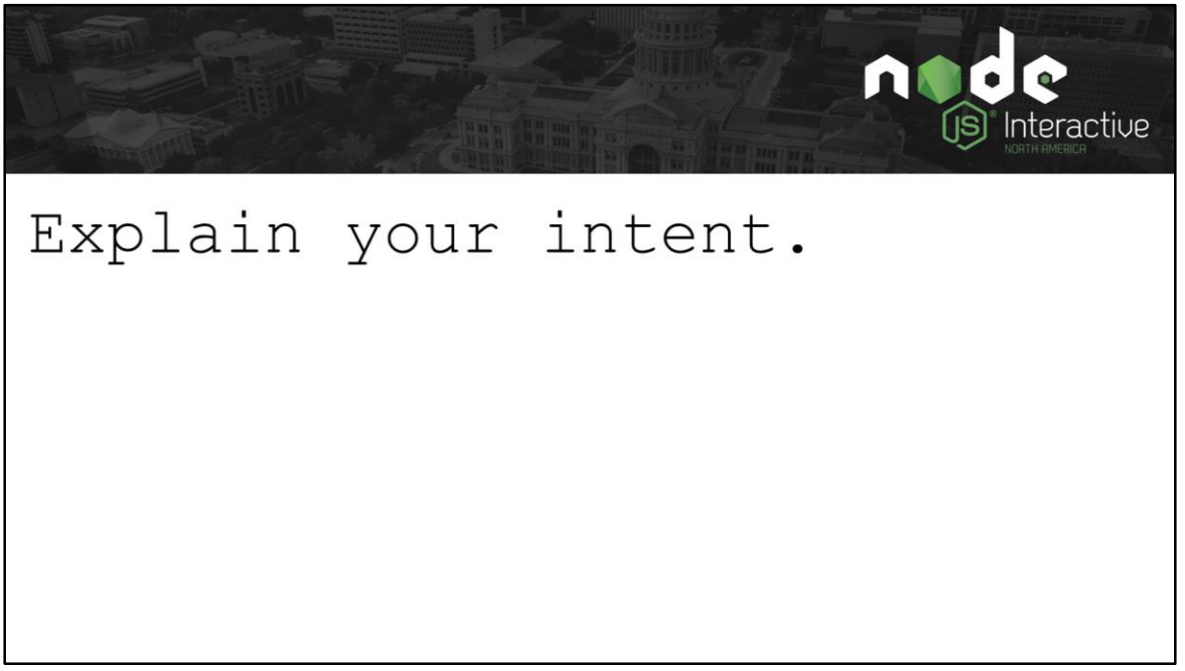
And your safeguards force others to actively be **irresponsible**.

It's like **locking your car doors**. It **won't really prevent** someone **from stealing** something **out of your car** if they really want it. But it does make them **have to work ever so slightly harder** at it. It's the **keeping honest people honest** philosophy. **And it works for code as well.**

[pause]

Regardless of whether or not you do build in safe guards, I encourage everyone to...

NEXT: Explain your intent.

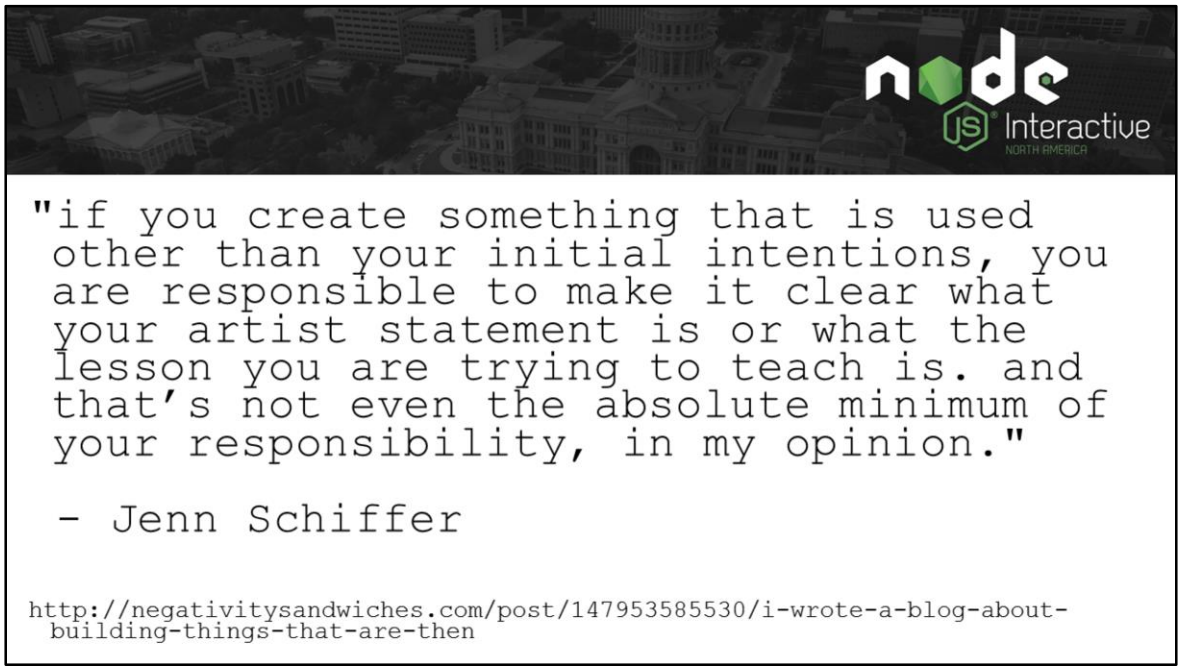


Explain your intent.

For every project,
Write a **mission statement**
explaining **why** you wrote the code,
your **intended usage**,
and **discouraging usage you disagree with**.

Another Jenn Schiffer quote…

NEXT: “`if you create something that is used other than your initial intentions, you are responsible to make it clear what your artist statement is or what the lesson you are trying to teach is. “`

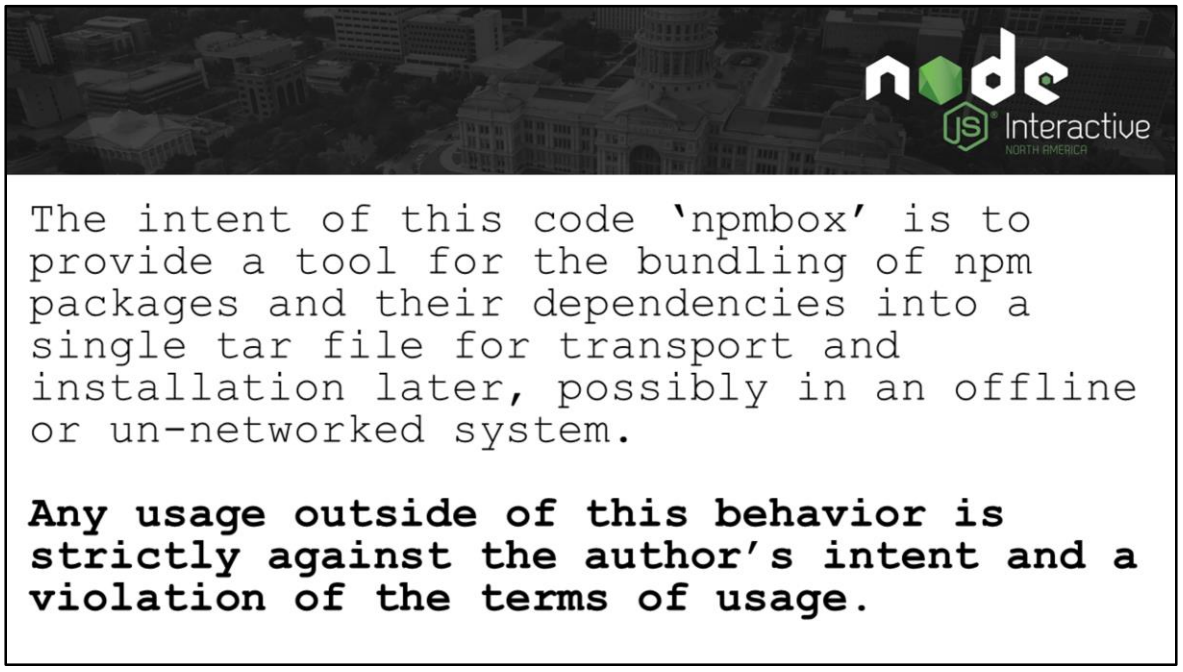


"if you create something that is used other than your initial intentions, you are responsible to make it clear what your artist statement is or what the lesson you are trying to teach is. "

This could be as simple as adding a top level README.md or LICENSE.txt files.
A USAGE_STATEMENT.txt if you will

Here's an example for a small project that I maintain.

NEXT: The cost of adding a USAGE_STATEMENT file to your repos is very low.



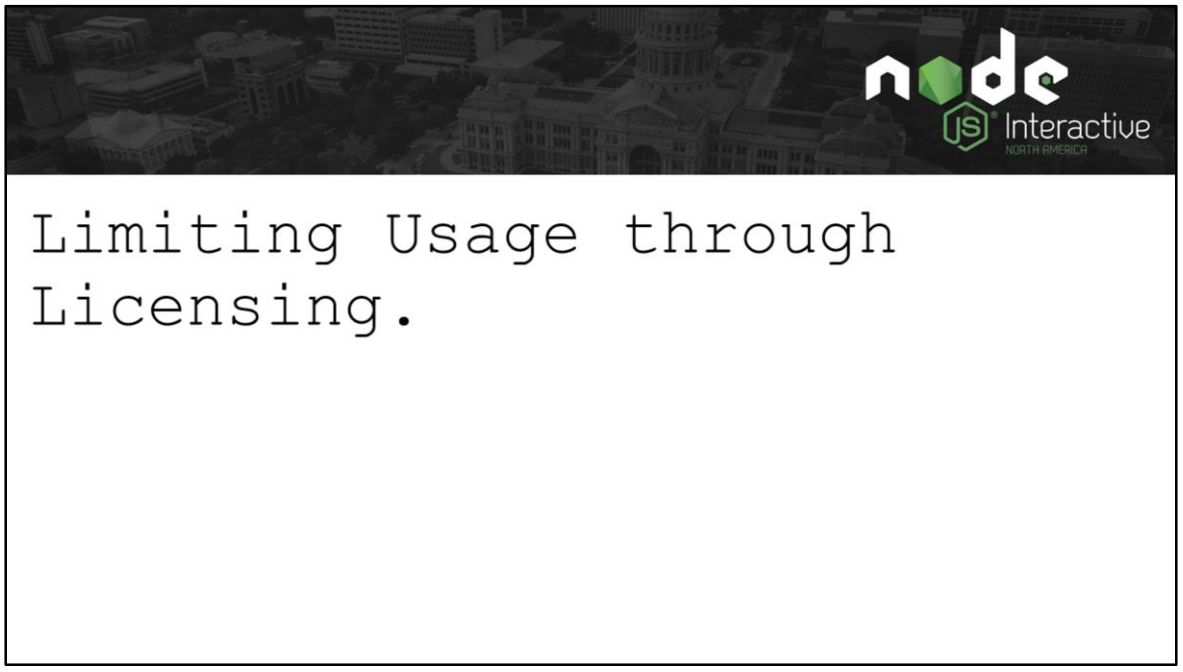
The USAGE_STATEMENT can be as **simple or as detailed** as you want,
So long as it includes your **purpose** for writing the project,
And **any usage** that you would **deem inappropriate**.

And the cost of adding such a USAGE_STATEMENT file to your projects is very low.
So it's low risk, low effort, but has a vast upside.

[pause]

Finally before you release anything, consider...

NEXT: Limit Usage Through Licensing



Limit Usage Through Licensing

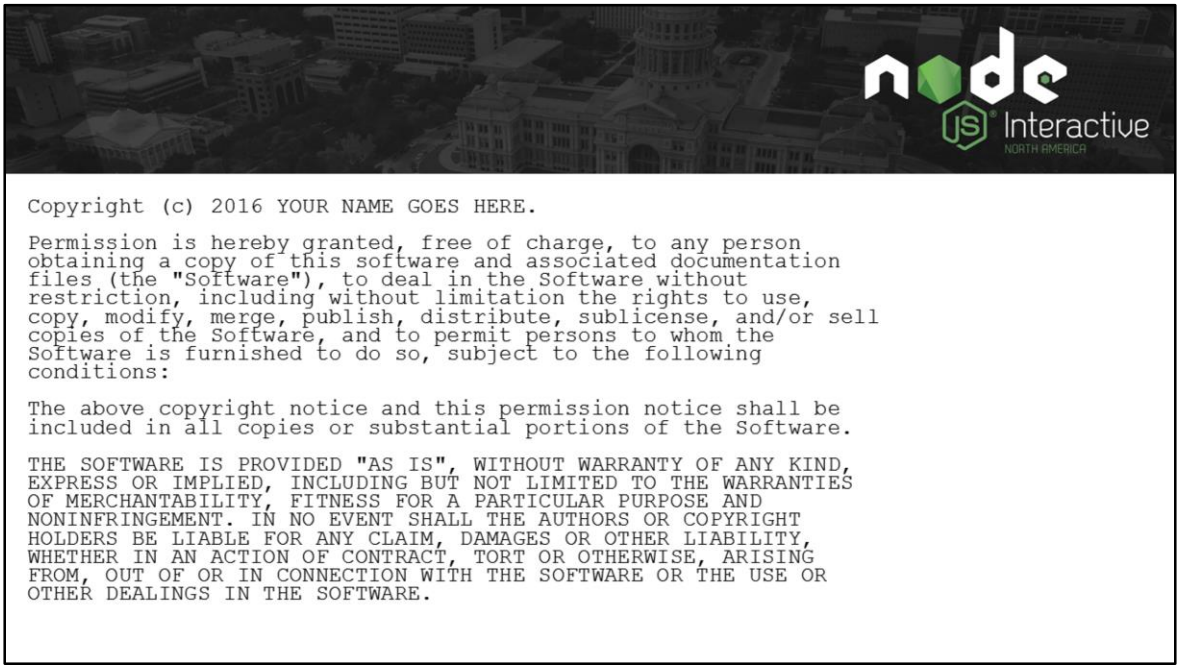
One of the major things we control in our projects
is the **license that gives our users certain permissions**
on **how, when, and where** they can **execute our code**.

As you may know, a license is
a grant of **specific rights**
under **specific conditions.**
The right to **use, copy, distribute, sell, make derivative works, etc**. are all scoped in a license.

So why not **use that license**
To **specifically deny** usages
that **you want to prevent.**

Here is the MIT license

NEXT: It would be very simple to just stick a condition in here



It would be very simple to just stick a condition in here

NEXT: That reads something like…

... copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

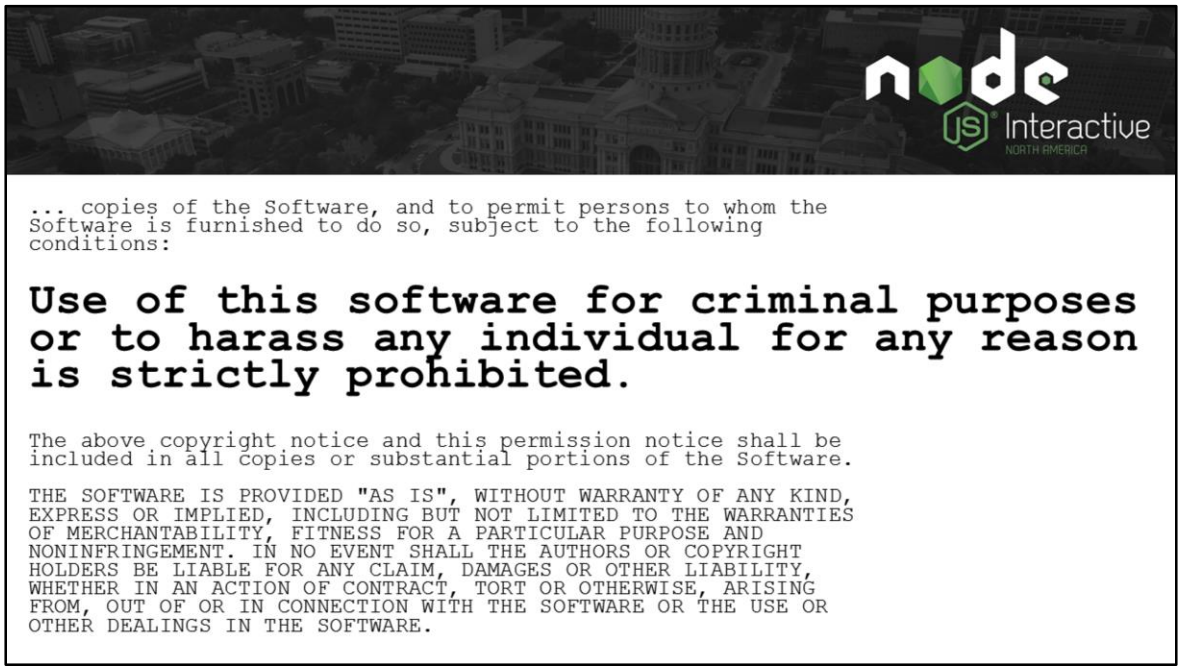
<INSERT ADDITIONAL CONDITIONS HERE>

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

That reads something like…

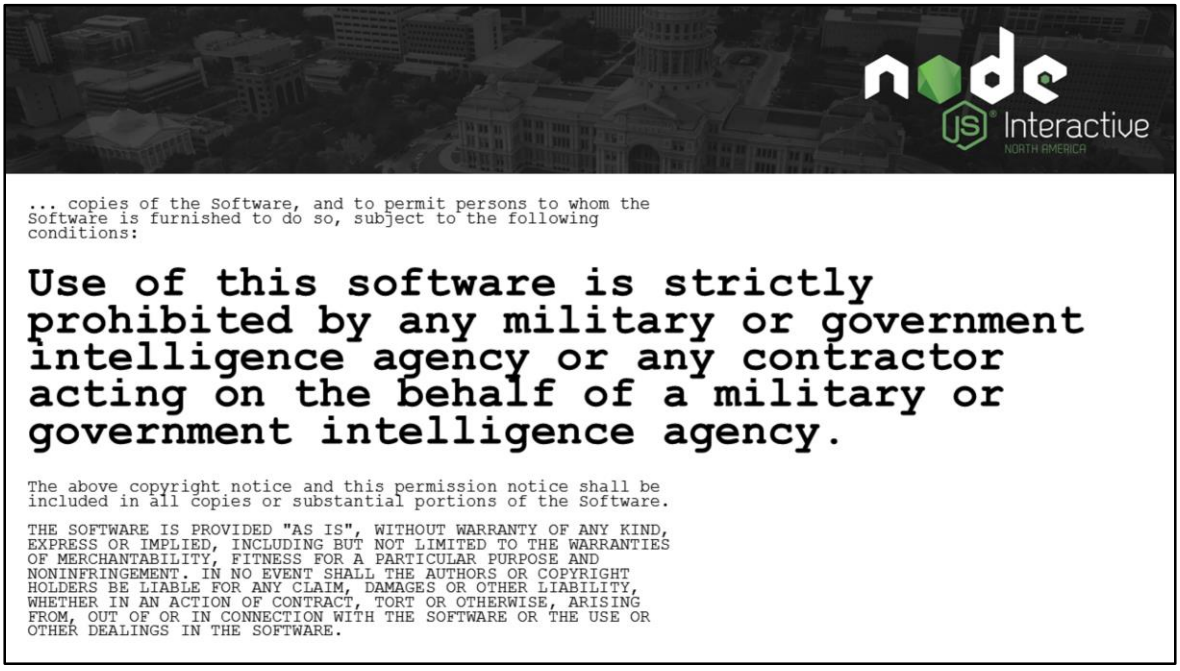
NEXT: `Use of this software for criminal purposes or to harass any individual for any reason is strictly prohibited.`



Use of this software for criminal purposes or to harass any individual for any reason is strictly prohibited.

Or another **variation that is a personal favorite of mine**…

NEXT: Use of this software is strictly prohibited by any military or government intelligence agency or any contractor acting on the behalf of a military or government intelligence agency.




```
Use of this software is strictly prohibited by any
military or government intelligence agency or any
contractor acting on the behalf of a military or
government intelligence agency.
```

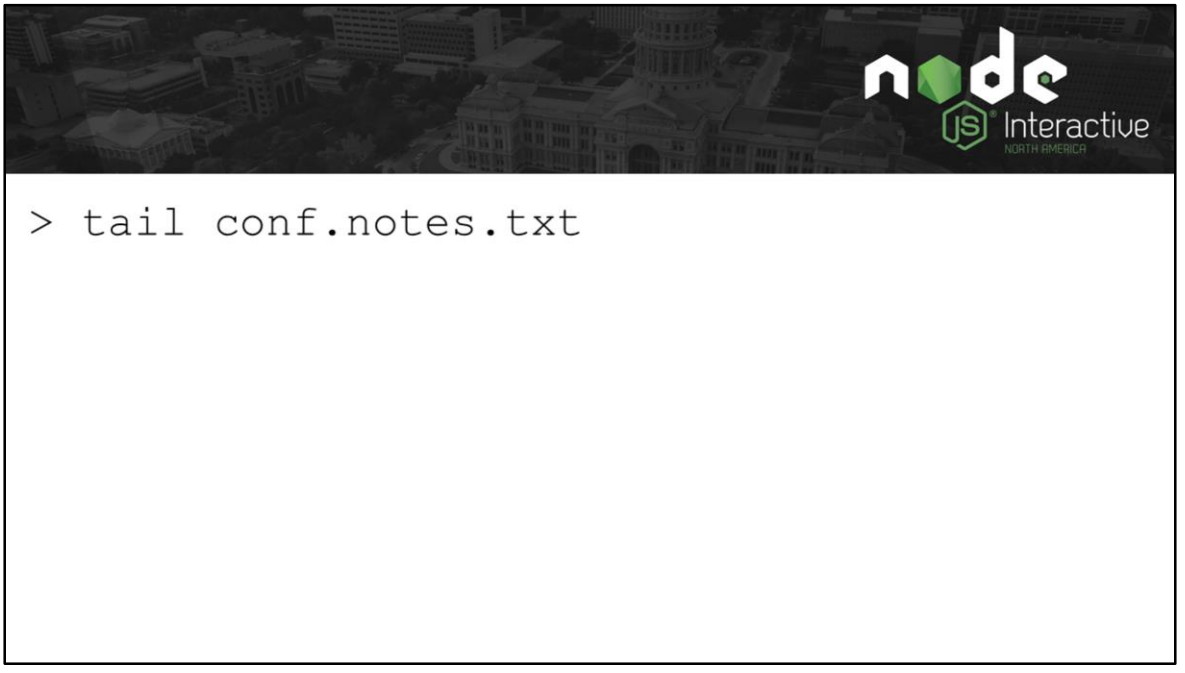
But there's a catch to this…

open source software means **open to everyone**.
Prohibiting a group or class of people is **against the motives** of the open source movement.
And **by limiting your licenses** in such a manner, you are **violating the openness** of it.
Also, **modifying well know licenses may not be compatible with the license itself**.

You will need to do some homework here
You will need to find the license that best suits your project,
And how **it** can be modified to limit
Against the kind of usage **you deem**
Moral irresponsible.

[pause]

NEXT: So that’s it.
In closing, let me break the rule I mentioned in the beginning
about how I'm not trying to impose my moral opinions on anyone.



In closing, let me break the rule I mentioned in the beginning
about how I'm not trying to impose my moral opinions on anyone.

I'm going to give you one moral opinion of mine…

NEXT: I believe we have a moral responsibility to examine our code to ensure that it is being used in a fashion that is morally consistent with our intended design.

A moral responsibility to examine our code to ensure it is used in a manner morally consistent with our intended usage.

I believe we have a **moral responsibility**
to examine **our code** to **ensure** that it is being used
in a fashion that is **morally consistent with our intended design**.

We achieve this by examining

our intent
The intent of our users
The target of our users
And our responsibilities to those targets.

And it is through the **answers** to these **questions**
that we **understand** how our code **effects others**
and what we can do to **ensure** a **better world**.

[Pause]

NEXT: My name is Glen Goodwin.

Glen R. Goodwin
SAS Institute, inc.

https://arei.net
https://twitter.com/areinet
https://github.com/arei

My name is Glen Goodwin.

I work for SAS Institue.

You can find me at these places on the internet.

And…
I hope I've given you a little bit to think about
And That in the future
you will take the time to consider
the moral consequences
of the code **that <u>you</u> write**.

Thank you.

Glen R. Goodwin
SAS Institute, Inc.

https://arei.net
https://twitter.com/areinet
https://github.com/arei

Thank You!

END

Field Guide to United States Intellectual Property
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