Luxeria Talks

Learning Rust:

Ownership & Borrowing

Material borrowed from:

into_rust()
SCREENCASTS
FOR LEARNING RUST!

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Outline

Why would you learn Rust?

How to get started

An introduction to Ownership & Borrowing

– Ownership

– Sharing

– Mutable Borrowing

Why Rust

```rust
fn load_images(paths: &[PathBuf]) -> Vec<Image> {
  paths.iter()
       .map(|path| {
          Image::load(path)
       })
       .collect()
}
```

Why Rust

```rust
extern crate rayon;

fn load_images(paths: &[PathBuf]) -> Vec<Image> {
  paths.par_iter()
       .map(|path| {
         Image::load(path)
       })
       .collect()
}
```

Why Rust

```rust
extern crate rayon;

fn load_images(paths: &[PathBuf]) -> Vec<Image> {
  let mut jpegs = 0;    // fix: use AtomicU32, Mutex, etc
  paths.par_iter()
       .map(|path| {
         if path.ends_with(".jpg") { jpegs += 1; }
         Image::load(path)
       })
       .collect()
}
```

The Rust compiler will
statically prevent this
data race!

hacking
without fear

Getting Rust

- https://play.rust-lang.org

- https://rustup.rs

     - releases all 6 weeks: stable, beta, nightly

- system package manager

  - might also install `rustup`

Setting up a Project

We're going to be making a binary project

– the other option is a library.

`cargo new` will create a skeleton project setup for you.

1. `cd` to a directory where you like to store code

2. `cargo new --bin intorust`

3. `cd intorust/`

If you use version control, now would be a good time to commit.
If you prefer using IDEs, see https://areweideyet.com/

Learning Material

- **www.rust-tutorials.com/exercises/**

- https://doc.rust-lang.org/book/

- https://github.com/ctjhoa/rust-learning

- https://github.com/rustlings/rustlings