Crate ▌ strum

strum

- Short for **Str**ing En**um**
- Provides macros to implement commonly desired functionality for enums:
  - Stringify variants
  - Convert strings into enums
  - Variant iterator, messages, and count
- Mostly useful for variants that do not contain associated data

Cargo.toml

```toml
[dependencies]
strum = { version = "0.20", features = ["derive"] }
```

Variant Count

```rust
use strum::EnumCount;

#[derive(Debug, EnumCount)]
enum Color {
    Red,
    Green,
    Blue,
}
println!("Variant count: {}", Color::COUNT);
```

Variant Iterator

```rust
use strum::{EnumIter, IntoEnumIterator};

#[derive(Debug, EnumIter)]
enum Color {
    Red,
    Green,
    Blue,
}
for variant in Color::iter() {
    println!("{:?}", variant);
}
```

Messages – Example

```rust
use strum::EnumMessage;

#[derive(Debug, EnumMessage)]
enum Status {
    #[strum(
        message = "Idle",
        detailed_message = "Waiting for jobs"
    )]
    Idle,
    Processing,
}
```

Messages - Output

```rust
let idle = Status::Idle;
println!("{:?}", idle.get_message());
println!("{:?}", idle.get_detailed_message());
let processing = Status::Processing;
println!("{:?}", processing.get_message());
```

```
Some("Idle")
Some("Waiting for jobs")
None
```

String to Enum - Example

```rust
use std::str::FromStr;
use strum::EnumString;

#[derive(Debug, EnumString)]
enum Status {
    #[strum(serialize = "i", serialize = "Idle")]
    Idle,
    #[strum(serialize = "p")]
    Processing,
}
```

String to Enum - Usage

```rust
// Ok(Idle)
let idle = Status::from_str("i");

// Ok(Idle)
let idle = Status::from_str("Idle");

// Ok(Processing)
let processing = Status::from_str("p");

// Err(NotFound)
let processing = Status::from_str("Processing");
```

Recap

- ***strum*** provides string-related functionality to enums
- ***EnumCount*** provides the ***Enum::COUNT*** constant containing the number of variants
- ***IntoIter*** and ***IntoEnumIterator*** provide the ***Enum::iter()*** method to iterate over variants
- ***EnumString*** combined with ***std::str::FromStr*** allow converting from a string to an enum