

Rust assignment

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

Cargo

- Cargo – Rust’s build system and package manager
- Create new project

```
cargo new hello_cargo
```

- Directory structure

```
Hello_cargo/  
  .git  
  Cargo.lock  
  Cargo.toml  
  src/  
    main.rs  
  target/  
    debug/  
      hello_cargo*
```

Compiling

- **Compile without Cargo**

```
rustc main.rs  
./main
```

- **Compile with Cargo**

```
cd hello_cargo  
cargo build // compile  
target/debug/hello_cargo // run  
cargo run // compile and run  
cargo check // make sure code compiles
```

crate

- crate – a collection of Rust source code files
- executable == binary crate
- library crate
- Cargo.toml – configuration file

```
[dependencies]
rand = "0.5.5"
abbreviator = "0.1.3"
```

- Main.rs

```
use rand::Rng // Bring Rng trait from rand library into scope
use abbreviator::abbreviate;
```

main.rs

```
use std::io;
use std::cmp::Ordering;

use rand::Rng;
use abbreviator::abbreviate;

fn main() {
    println!("Use of abbreviate() from abbreviator crate:");
    println!("Abbreviation of \"hello\" is {}", abbreviate("hello"));
    println!("Abbreviation of \"san jose state university\" is {}", abbreviate("san jose state university"));
    println!("Abbreviation of \"This is a sentence.\" is {}", abbreviate("hello"));
    println!("\nUse of thread_rng() from rand crate:");
    let secret_number = rand::thread_rng().gen_range(1,101);
    println!("The random number is: {}", secret_number);
}
```

output

```
michaela@DESKTOP-IIVM95D:/mnt/c/Users/Michaela/Documents/SJSU/Spring2021/CS_297/Rust/projects$ cd my_project/
michaela@DESKTOP-IIVM95D:/mnt/c/Users/Michaela/Documents/SJSU/Spring2021/CS_297/Rust/projects/my_project$ cargo build
    Updating crates.io index
    Compiling libc v0.2.87
    Compiling rand_core v0.4.2
    Compiling abbreviator v0.1.3
    Compiling rand_core v0.3.1
    Compiling rand v0.5.6
    Compiling my_project v0.1.0 (/mnt/c/Users/Michaela/Documents/SJSU/Spring2021/CS_297/Rust/projects/my_project)
    Finished dev [unoptimized + debuginfo] target(s) in 6.70s
michaela@DESKTOP-IIVM95D:/mnt/c/Users/Michaela/Documents/SJSU/Spring2021/CS_297/Rust/projects/my_project$ cargo run
    Finished dev [unoptimized + debuginfo] target(s) in 0.13s
    Running `target/debug/my_project`

Use of abbreviate() from abbreviator crate:
Abbreviation of "hello" is h3o
Abbreviation of "san jose state university" is s23y
Abbreviation of "This is a sentence." is T17.

Use of thread_rng() from rand crate:
The random number is: 82
michaela@DESKTOP-IIVM95D:/mnt/c/Users/Michaela/Documents/SJSU/Spring2021/CS_297/Rust/projects/my_project$ _
```