Static Method of Structs

This lesson teaches you how to declare static methods of structs.

What Are Static Methods?

Static methods are the ones that can be invoked without instantiating the struct.
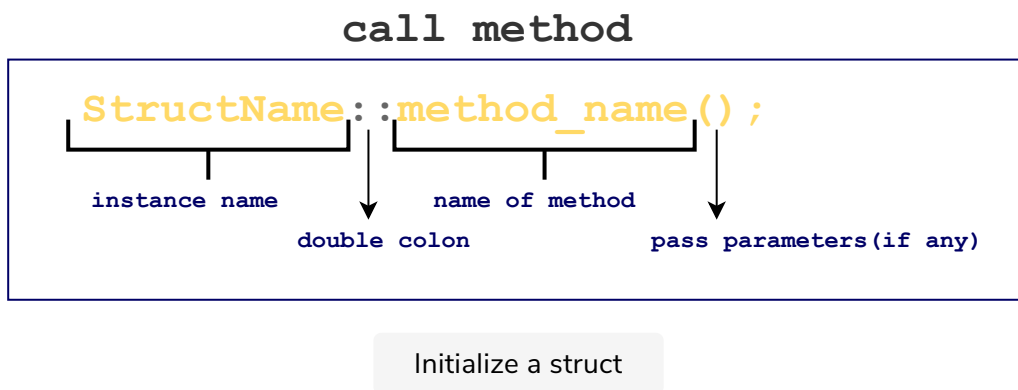
Declare a Static Method

The following illustration explains how to declare a static method within the `impl` construct.

> **Note:** If the construct is declared with an `impl` keyword, it must have one or both types of methods, static or non-static.

Invoke a Static Method

A static method can be invoked by following the struct name with the membership operator `::` followed by the method name :

call method

```
StructName::method_name();
```

instance name · double colon · name of method · pass parameters (if any)

Initialize a struct

Example

The following example creates a static method `my_static_method` and invokes it from the main function.

```rust
// declare a struct
struct Course {
    name: String,
    level:String,
    code: i32,
}
impl Course {
    // static method
    fn my_static_method(n: String, l: String, c:i32) -> Course {
        Course {
        name: n,
        level:l,
        code:c
         }
    }
    //display
    fn display(&self){
        println!("name :{} code:{} of type: {}", self.name, self.code, self.level );
    }
}
fn main(){
    // call the static method
    let c1 = Course::my_static_method("Rust".to_string(), "beginner".to_string(), 132);
    c1.display();
```

```
}
```

Explanation

- `main` **function**

  From **line 21 to line 25**, `main` function is defined.

    - On **line 23**, the static method `my_static_method()` defined within the `impl` construct is invoked.

      > **Note:** struct is not instantiated

- `impl` `Course` **construct**
    - The `impl` construct is defined from **line 7 to line 15**. Within the `impl` construct is a function `my_static_method`, that takes the parameters `n`, `l` and `c` of type `String`, `String`, and `i32` and assigns their values to `Course` and return the `Course`.

- `struct`

  On **line 2**, a `struct` `Course` is declared. Within the struct body, three items namely `code`, `name`, `level`, are declared of type `i32`, `String`, and `String` respectively.

Now that you have learned about the methods of structs, learn about tuple structs in the next lesson.