CS 551 Spring 2025 Quiz 8 KEY

April 3, 2025

Name:

Email:

Instructions: Put your name and email in the appropriate places. Answer, to the best of your ability the **THREE QUESTIONS** below. Additionally, sign your name below the academic honesty statement. If you deviate from these instructions in any way, you will receive a zero on the quiz.

Unless otherwise specified, you can assume that all necessary imports have been made and there are no deliberate typos in function or type names.

Consider the following stucts, traits, enums, and functions:

```
1   #[derive(Debug, Clone)]
2   struct MyStruct {
3       string: String,
4   }
5
6   impl MyStruct {
7       fn new(string: String) -> Self {
8           Self { string }
9       }
10  }
11
12  impl From<MyStruct> for String {
13      fn from(value: MyStruct) -> Self {
14          format!("{value:?}")
15      }
16  }
17
18  fn function1(my_string: &str) {}
19
20  fn function2(my_string: String) {}
21
22  fn main() {}
```

Question 1: Will the following program compile:

```
1  fn question1() {
2      let my_struct = MyStruct::new("question1".into());
3      function1(&String::from(my_struct));
4      println!("{my_struct:?}");
5  }
```

(circle your answer)

No

Reason: `String::from()` takes ownership of `my_struct`.

Question 2: Will the following program compile:

```
1  fn question2() {
2      let my_struct = MyStruct::new("question2".into());
3      function2(my_struct.into());
4      println!("{my_struct:?}");
5  }
```

(circle your answer)

No

Reason: `my_struct.into()` is the same as calling `String::from(my_struct)`

Question 3: Will the following program compile:

```
1  fn question3() {
2      let my_struct = MyStruct::new("question3".into());
3      function2(my_struct.clone().into());
4      println!("{my_struct:?}");
5  }
```

(circle your answer)

Yes

Reason: We are cloning `my_struct`, thus the `into()` call is working on the clone, not `my_struct`.

Academic honesty statement: I have done this quiz completely on my own. I have not copied it from, nor have I given answers to anyone else. I understand that if I am involved in plagiarism or cheating I will have to sign an official form that I have cheated and that this form will be stored in my official university record. I also understand that I will receive a grade of 0 for the quiz involved, my grade in the class will be reduced by at least one level (e.g., from A to B) for my offense, and that I will receive a grade of "F" for the course for any additional offense of any kind.