**WEEK 9**

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| Q1. Rustlings exercise GitHub link: |
| ANSWER:  [AhmedAlkhoori\_100061091/Labs at main · afoulathi/AhmedAlkhoori\_100061091](https://github.com/afoulathi/AhmedAlkhoori_100061091/tree/main/Labs) |
| Q2.  A. Find and explain two traits used in C2RUST? (also mention the URLs)  B. Explain where those are used, and why?  C. Explain the alternatives to using traits? |
| ANSWER:   1. One trait used is the From trait ([c2rust/analysis/runtime/src/mir\_loc.rs at master · immunant/c2rust](https://github.com/immunant/c2rust/blob/master/analysis/runtime/src/mir_loc.rs)) implemented in the Local struct to allow type conversion between integer types (u32, usize) and the Local struct. Another one is the Default trait ([c2rust/analysis/runtime/src/mir\_loc.rs at master · immunant/c2rust](https://github.com/immunant/c2rust/blob/master/analysis/runtime/src/mir_loc.rs)) that allows the TransferKind enum to be initialized with default values. 2. The From trait is used throughout C2Rust’s runtime analysis component for convenience and safety, and it is used to convert integer types into the Local struct and vice versa. The Default trait is also part of the runtime analysis, and what it does is create an instance of an enum like TransferKind with default values to save time instead of manually initializing the default values ourselves. 3. Instead of implementing From, we could manually define functions within the Local implementation for explicit conversions. As for the Default, we can define a constructor inside Local that returns a default instance. |