Presidential Initiative for Artificial Intelligence and Computing (PIAIC)

PIAIC Batch 4-35 IoT

https://www.piaic.org

Internet of Things (IoT) Specialist Program

Quarter 2: Rust Programming

Assignment # 1

1. Define Generic types in your own words?

   ANSWER:
   Generic provides flexibility, reusability, easness of code and avoid from duplication of the code and mismatch type error.

2. List three scenarios where using generic types will be helpful compared to using concrete types? Example: an estimation function for two different types of sensors where one sensor gives output in integer and the other gives in floating point.
   ANSWER:
   i) Find the position using struct with generic types in which one coordinate might have integer type and the other floating type value.
   ii) Create a function passing generic type parameters to perform arithmatic operations (add, subtract, etc).
   iii) Create struct of an object to define characteristics of different types String, integer, etc.

3. Rewrite the given Struct Car with 3 parameters of generic types T,U,Y
   ANSWER:

src > main.rs

```rust
#[derive(Debug)]
struct Car <T,U,Y> {
    make: T,
    length: U,
    width: Y
}

fn main() {
    let car = Car {
        make: String::from("Honda"),
        length: 15,
        width: 14.6
    };
    println!("{:#?}", car);
}
```