

## DateTime (DTT) Setup and Usage Guide

### Overview

is a versatile Rust library designed for parsing, validating, manipulating, and formatting dates and times. Tailored to modern software development needs, enhances date and time data handling with a focus on performance and accuracy. It offers a range of functions and data structures that allow you to perform various date and time operations with ease, such as determining the day of the month, hour of the day, working with ISO 8601 date and time formats, and many others.

The library supports the creation of new DateTime objects with either UTC or custom timezone specifications, ensuring that you always have accurate and relevant date and time information. Additionally, it provides a mechanism to validate input dates and times, ensuring that you always have accurate information to work with.

### Features

#### Core Features

**Versatile Parsing and Formatting** Efficiently handles various date and time formats. **Rigorous Validation** Ensures data integrity and correctness. **Advanced Manipulation** Facilitates complex date and time computations and transformations. **Rust-Optimized** Leverages Rust's capabilities for high-performance and safety. **Advanced Features**

**Reliability** Implements error handling for robust and secure operations. **Configurability** Adaptable to different programming requirements. **Comprehensive Documentation** Well-documented API for easy integration and use. **Functionality**

**Parsing and Validation** Parse and validate date and time data efficiently. **Manipulation**

tion ToolsPerform a range of date and time manipulations.Flexible FormattingCustomize the representation of date and time data.Error HandlingRobust handling of common date and time processing errors.The library provides date and time types and methods to make it easier to manipulate dates and times. It uses the serde library to derive the Deserialize and Serialize traits to convert the struct to and from various data formats. It also uses the time and regex crates to deal with time conversions and regular expressions respectively.

The

struct includes fields such as:

Feature	Description
---	---
Day of the month	(01-31)
Hour of the day	(00-23)
ISO 8601 date and time	(e.g. "2023-01-01T00:00:00+00:00")
ISO week number	(1-53)
Microsecond	(0-999999)
Minute of the hour	(0-59)

| Month(e.g. "January") |  
|  
| Now object(e.g. "2023-01-01") |  
|  
| Offset from UTC(e.g. "+00:00") |  
|  
| Ordinal date(1-366) |  
|  
| Second of the minute(0-59) |  
|  
| Time object(e.g. "00:00:00") |  
|  
| Time zone object(e.g. "UTC") |  
|  
| Weekday object(e.g. "Monday") |  
|  
| Year object(e.g. "2023") |

of which represents different aspects of a date and time.

The

struct has two methods to create instances:

and

.

creates a new

object with UTC timezone, and

creates a new

object with a custom timezone.

It also includes a method

which checks if the input string represents a valid day of the week. It also includes a method

which checks if the input string represents a valid month of the year.

Started

Begin using

in just a few steps.

Requirements

Ensure you have the Rust toolchain, version 1.69.0 or later (stable).

Installation

After installing the Rust toolchain (instructions on the Rust website ), install

I DateTime (DTT) with:

instructions on the Rust website .

Once you have the Rust toolchain installed, you can install

using the following command:

cargo install dttYou can then run the help command to see the available options:

dtc --help

To use the

library in your project, add the following to your

file:

[dependencies]

dtc = "0.0.4"Add the following to your

file:

extern crate dtc;

use `dt::*`; then you can use the functions in your application code.

defines specific error types, such as

and

, ensuring robust error handling in your applications.

To get started with

, you can use the examples provided in the

directory of the project.

To run the examples, clone the repository and run the following command in your terminal from the project root directory.

`cargo run --example dt Example 1` Creating a new `DateTime` object

```
use dt::DateTime;
```

```
use dt::dt_print;
```

```
fn main() {
```

```
// Create a new DateTime object with the current UTC time
```

```
let now = DateTime::new();
```

```
dt_print!(now);
```

```
} Example 2
```

 Creating a new `DateTime` object with a custom timezone

```
use dt::DateTime;
```

```
use dt::dt_print;
```

```
fn main() {
```

```
// Create a new DateTime object with a custom timezone (e.g., CEST)
```

```
let paris_time = DateTime::new_with_tz("CEST");
```

```
dt_print!(paris_time);
```

```
} Custom timezone supported by
```

are:

Abbreviation	UtcOffset	Time Zone Description
ACDT		
Australian Central Daylight Time		
ACST		
Australian Central Standard Time		
ADT		
Atlantic Daylight Time		
AEDT		
Australian Eastern Daylight Time		
AEST		
Australian Eastern Standard Time		
AKDT		
Alaska Daylight Time		
AKST		
Alaska Standard Time		
AST		
Atlantic Standard Time		
AWST		
Australian Western Standard Time		
BST		
British Summer Time		
CDT		

Central Daylight Time	
CEST	
Central European Summer Time	
CET	
Central European Time	
CST	
Central Standard Time	
ECT	
Eastern Caribbean Time	
EDT	
Eastern Daylight Time	
EEST	
Eastern European Summer Time	
EET	
Eastern European Time	
EST	
Eastern Standard Time	
GMT	
Greenwich Mean Time	
HADT	
Hawaii-Aleutian Daylight Time	
HAST	
Hawaii-Aleutian Standard Time	
HKT	
Hong Kong Time	

IST	
Indian Standard Time	
IDT	
Israel Daylight Time	
JST	
Japan Standard Time	
KST	
Korean Standard Time	
MDT	
Mountain Daylight Time	
MST	
Mountain Standard Time	
NZDT	
New Zealand Daylight Time	
NZST	
New Zealand Standard Time	
PDT	
Pacific Daylight Time	
PST	
Pacific Standard Time	
UTC	
Coordinated Universal Time	
WADT	
West Australian Daylight Time	
WAST	



West Australian Standard Time	
WEDT	
Western European Daylight Time	
WEST	
Western European Summer Time	
WET	
Western European Time	
WST	
Western Standard Time	

### 3Formatting a DateTime object

```
use dtt::DateTime;
use dtt::dtt_print;

fn main() {
    // Create a new DateTime object with the current UTC time
    let now = DateTime::new();
    // Format the DateTime object as a string
    let formatted_time = now.format("%Y-%m-%d %H:%M:%S");
    dtt_print!("Formatted time{}", formatted_time);
}
```

### Example 4Parsing a string into a DateTime object

```
use dtt::DateTime;
use dtt::dtt_print;

fn main() {
    // Parse a string into a DateTime object
    let date_string = "2023-05-12T12:00:00+00:00";
    match DateTime::parse(date_string) {
```

```
Ok(datetime) => dtt_print!("Parsed DateTime{}", datetime),  
Err(err) => dtt_print!("Error parsing DateTime{}", err),  
}  
}
```

For comprehensive information and resources related to  
, we invite you

to explore our extensive documentation.

Detailed guides, API references, and examples are available on [docs.rs](https://docs.rs) ,  
where you'll find in-depth material to support your development needs.

For library-specific details and to access our collection of Rust libraries,  
visit [lib.rs](https://lib.rs) .

Additionally, you can explore [crates.io](https://crates.io) to find a wide range of Rust  
crates, which include the necessary tools and libraries to enhance your  
projects.

These resources are designed to provide you with the most up-to-date  
and thorough information to assist in your development endeavours.

!Divider