

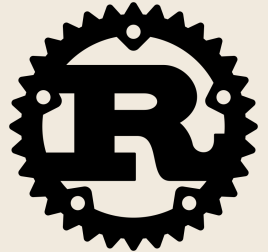
# Rust Programming



**Level:** Intermediate

**Duration:** 6 hours

Explore the power and efficiency of Rust, a modern language designed for speed, security, and low-level memory access. This course is ideal for experienced developers looking to enhance their skills and productivity by leveraging Rust's unique capabilities.



## Course Outline

- **Introduction to Rust:** Overview of the Rust language focusing on speed, security, and low-level memory access.
- **Setup:** Setting up a basic Rust environment.
- **Language:** Exploring key language features, including the borrow checker.
- **Data analytics:** Building a command-line application for data analytics over large datasets.
- **Python integration:** Introduction to Rust's speed and integration with Python using PyO3 for native extensions.
- **Performance:** Exploring technologies to enhance Python performance with Rust.

# Learning Outcomes

## Session 1:

*By the end of session 1 participants will...*

- understand the basics of Rust.
- know how to set up a Rust environment.
- explore Rust language features:
  - variables and immutability
  - functions with numbers
  - structs and derive
  - references and calls
  - borrowing
- build a command-line application.

## Session 2:

*By the end of session 2 participants will...*

- understand how Rust integrates with Python.
- be able to use PyO3 for building native extensions.
- enhance Python performance using Rust.

## Prior Knowledge

This course assumes participants have prior experience in programming and basic knowledge of Python and Rust.

## Attendee Feedback

## Contact

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