

# Rust BuildOn

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# Build-On

Learn Rust in small steps

- Start with a simple Rust demo
  - Text Finder
  - Directed Graph
  - Lexer
  - ...
- Build on that in interesting ways, e.g., for Text Finder:
  - Add capability – command line parsing, directory tree walking, ...
  - Use generics – plugin components
  - Use threads – parallel text searches, thread pool based dir traversal
  - Use library components

# Build-On Process

- Zoom meeting that:
  - Briefly describes motives for using Rust and Rust basic ideas
  - Provides two or three references
  - identifies a problem and refers to starter code
  - Q&A
- Subsequent meetings
  - Briefly describes my solution
  - Others may discuss their solutions and/or problems
  - Pose next extension to problem
  - Q&A

# BuildOn Timeline: Bi-Weekly Sessions

- Session #1 – BuildOn Introduction & Rust Preview
- Session #2 – Project Introduction & Some Rust details
- Session #3 – **Step #1**: TextSearch -> Functional package with demo
- Session #4 – **Step #2**: DirNav -> “
- Session #5 – **Step #3**: CmdlnParser -> “
- Session #5 – **Step #4**: Executive, Display -> Functional project
- Session #6 – RegEx Extension ?
- Session #7 – Parallel Text Search ?

# Build-On Motivation

- Participate in a developer community interested in learning Rust
- Stay in contact with SU Computer Engineering and Computer Science alumni
- Support conversations about Rust and other interesting tech topics
  - Encourage both active learners and curious browsers
- Rust is a very clever language supporting development of secure, high performance code (same ballpark as C++ without undefined behavior)
  - Rust website lists 138 companies using Rust in production
  - Tiobe lists rust as 25<sup>th</sup> in their language popularity index (Oct 2020).

# BuildOn Introduction Topics

- [BuildOn Introduction](#)
  - [Step #0](#)
  - [Step #1](#)
  - [Site Map](#)
    - [Site Design](#)
    - [Starting Trail - quick peek at items](#)
    - [Starting Trail – Start](#)
    - [Starting Trail – Tooling](#)
    - [Starting Trail - Rust Libs](#)
- [Rust std::lib](#)
  - [Rust Bites](#)
  - [Rust Story](#)
  - [BuildOn](#)
  - [Rust Repository](#)

# Next BuildOn – Session #2

## Project Review

- [Step #0](#)
  - The BuildOn Project
- [Step #1](#)
  - Text Search package
  - Look at Starter Code

## Rust

- [Rust Safety](#)
- [Rust Error Handling](#)
- Answer Questions

# BuildOn – Session #3

## Project

- Code review: [Step #1 - TxtSrch](#)
  - Code will be posted
- [Step #2 – DirNav](#)
  - Specification
  - Starter code

## Rust

- [Structs](#)
- [Rust Libs](#)
- [Rust std::fs](#)
- Answer Questions



# BuildOn

- Session #4
  - CmdInParser
- Session #5
  - Executive & Display
- Session #6 ?
  - RegEx Search
- Session #7 ?
  - Parallel Text Search

That's All Folks!