Lecture 1

Introduction to Rust

What we will cover today

- Introduction to Rust
- Rust installation
- Hello world program

Optional Reading:
The Rust Book Chapter 1 – Getting Started

What is Rust?

Multi-paradigm

- Programming paradigm: “Type” of a language
- Mainly imperative, but has touches of functional, object-oriented etc

General purpose

- Systems programming
- Command line applications
- Web applications

Why Rust?

Memory safety and Thread safety

- New memory model to prevent classic memory errors
- Compiler helps you to catch common concurrency errors

Good tooling

- Readable documentation
- Compiler that gives useful messages
- Integrated package manager and build tool (cargo)

Installation

Follow the instructions here: https://www.rust-lang.org/tools/install

MacOS / Linux:

```
curl --proto '=https' --tlsv1.2 -sSf https://sh.rustup.rs | sh
```

Windows:

Download and run `rustup-init.exe`

These are the easiest ways, but there are other ways if you have concerns about the default method

Installation

What actually happens?

- You're actually installing `rustup` – A "toolchain multiplexer"
- `rustup` basically helps you to **install** and **manage** your toolchain

What is a toolchain?

- Set of tools to help you turn your project into an executable
- Compiler (`rustc`)
- Build tool, dependency manager (`cargo`)
- Other related softwares

Demo

Announcements

Remember to do the onboarding form!
Find the link in Discord, under **#resources**

Come to office hours if you have trouble with installation
Find the office hours time in Discord, under **#resources**