Syllabus

1. Programming in C*, the C subset in which selfie is written and compiles.

2. Introduction to RISC-U, the RISC-V subset targeted, emulated, and virtualized by selfie.

3. Introduction to starc, the selfie compiler (scanner, parser, type checker, register allocator, code generator).

4. Introduction to mipster, the selfie emulator (virtual and physical memory, machine contexts).

5. Introduction to hypster, the selfie hypervisor (virtual memory, context switching).

6. Introduction to monster, the selfie symbolic execution engine (planned).

Programming in C*

- C* is a tiny subset of the programming language C

- C* supports only 2 data types: unsigned integer, `uint64_t`, and pointer to unsigned integer, `uint64_t*`. There are no signed integers and no composite data types.

- C* features the unary * operator as the only means to access heap memory hence the name C*. There are no arrays and no structs in C*.

- C* features 5 statements (assignment, if-else, while loop, procedure call, return).

- C* has 3 types of literals (signed decimal number, character, string).

- C* supports 5 arithmetic operators (+, –, `*`, `/`, `%`) and 6 comparison operators (==, `!`= ,< ,<= ,> , >=). There are no bitwise operators and no Boolean operators.

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