Introduction to Computer Systems

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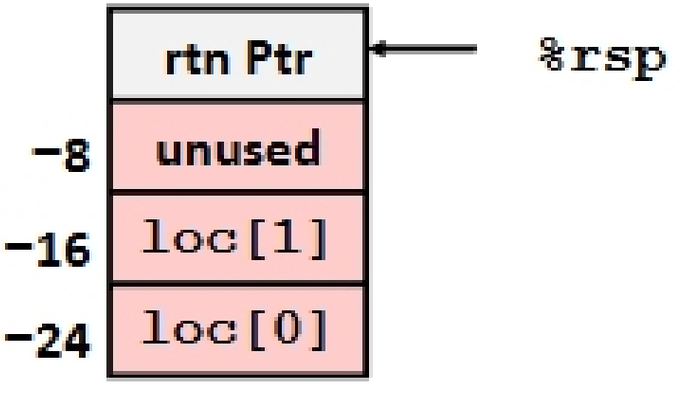
Last Time

%rax	Return value
%rbx	Callee saved
%rcx	Argument #4
%rdx	Argument #3
%rsi	Argument #2
%rdi	Argument #1
%rsp	Stack pointer
%rbp	Callee saved

%r8	Argument #5
%r9	Argument #6
%r10	Callee saved
%r11	Used for linking
%r12	C: Callee saved
%r13	Callee saved
%r14	Callee saved
%r15	Callee saved

Last Time

- **Procedures (x86-64): Optimizations**
  - No base/frame pointer
  - Passing arguments to functions through registers (if possible)
  - Sometimes: Writing into the "red zone" (below stack pointer)



  - Sometimes: Function call using `jmp` (instead of `call`)
  - **Reason: Performance**
    - **use stack as little as possible**
    - **while obeying rules (e.g., caller/callee save registers)**