

CS33 Homework Assignment 7 Solutions

Fall 2022

1. We covered the *sigsetjmp* and *siglongjmp* functions in lecture (Slides XXII-4 and XXII-5). The *sigsetjmp* function saves some information in the *sigjmp_buf* data structure so that the caller's context can be restored following a call to *siglongjmp*, resulting in *sigsetjmp*'s returning a second time. What information is saved?

Answer: After the *siglongjmp*, the stack must be restored to what it was at the moment *sigsetjmp* was called. Thus the caller's stack pointer must be saved. Control must returned to the instruction after the call to *sigsetjmp*, thus the caller's return address must be saved. The caller of *sigsetjmp* expects that all callee-save registers are unmodified, so all of them must be saved.