Assignment 3: Question 3.1:

\* Project : Assignment 3

\* Name of the file : COA\_A3\_P1.S

\* Brief Description of file : Assembly code for transitioning between privilege levels

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We first load sp value, machine trap handler and supervisor trap handler addresses.

As the mcause value for ecall is 8, we accordingly set the 8th lsb of medeleg to 1.

We now enter machine mode, and clear mpp before transitioning to supervisor mode. We set mpp to 01 and load transition address in mepc. We change value of t1 to show that the transition has occurred.

We now enter supervisor mode, and clear mpp before transitioning to user mode. We set spp to 01 and load transition address in sepc. We change value of t1 to show that the transition has occurred.

On the returning transitions we use ecall to step up one privilege level from user to supervisor or supervisor to machine modes. This is where the value of t1 is useful.

The specifics of which functionality of the above explanation is done and where is shown via comments in the assembly code file.