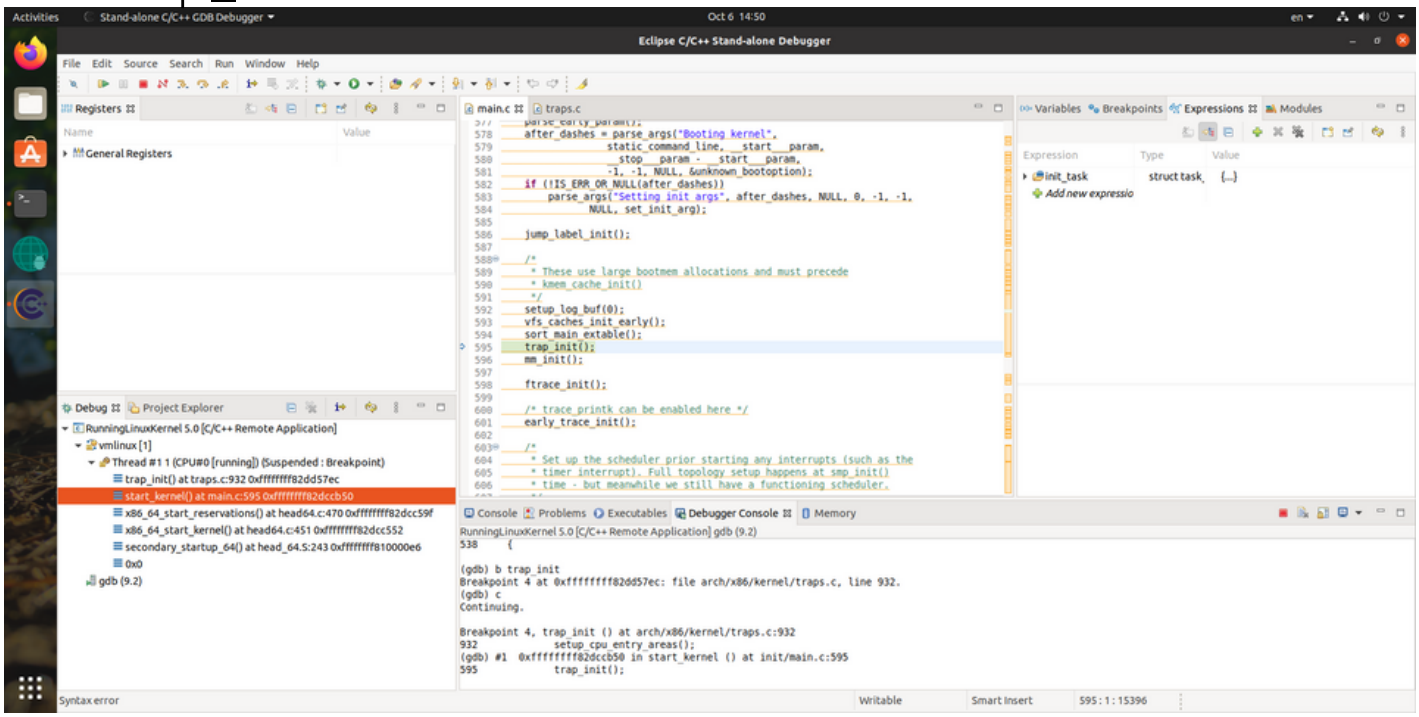
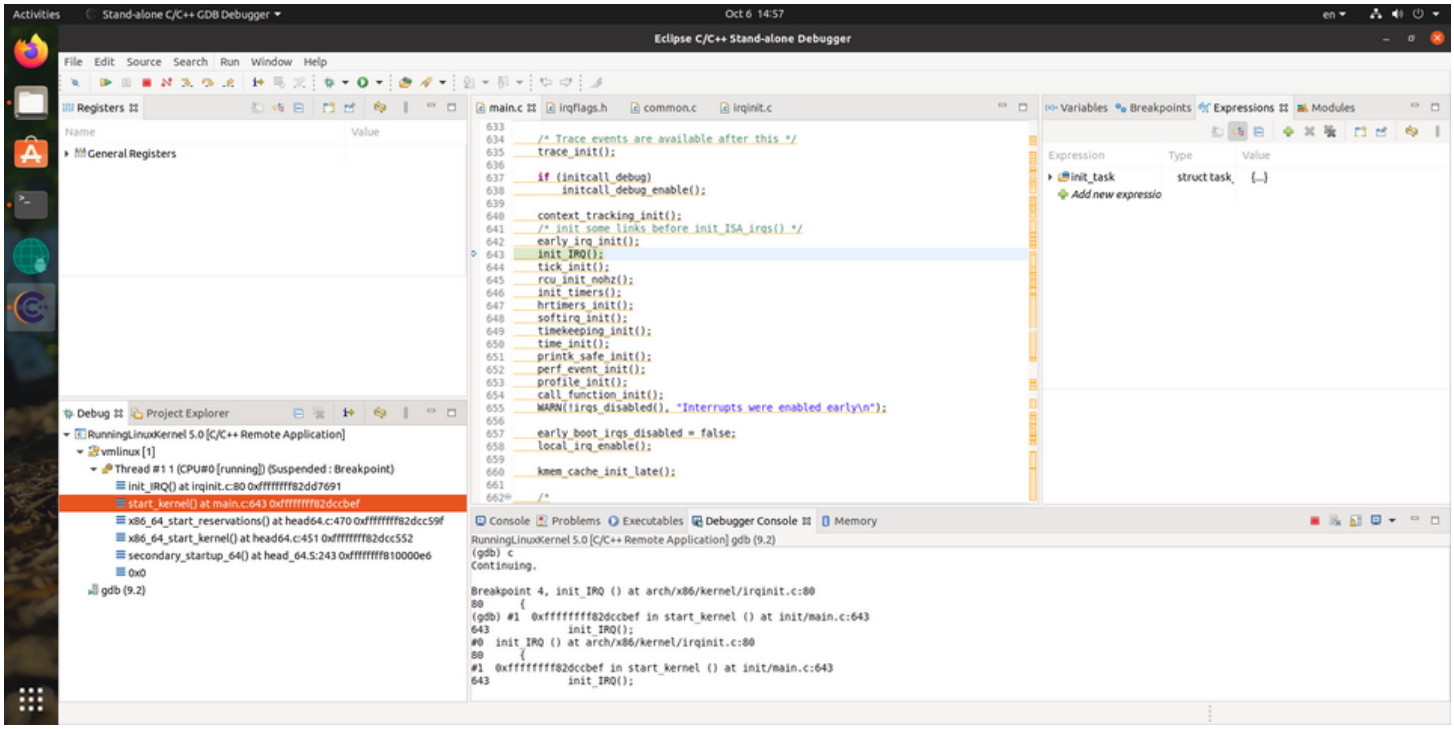
HW2

408410094葉X勛

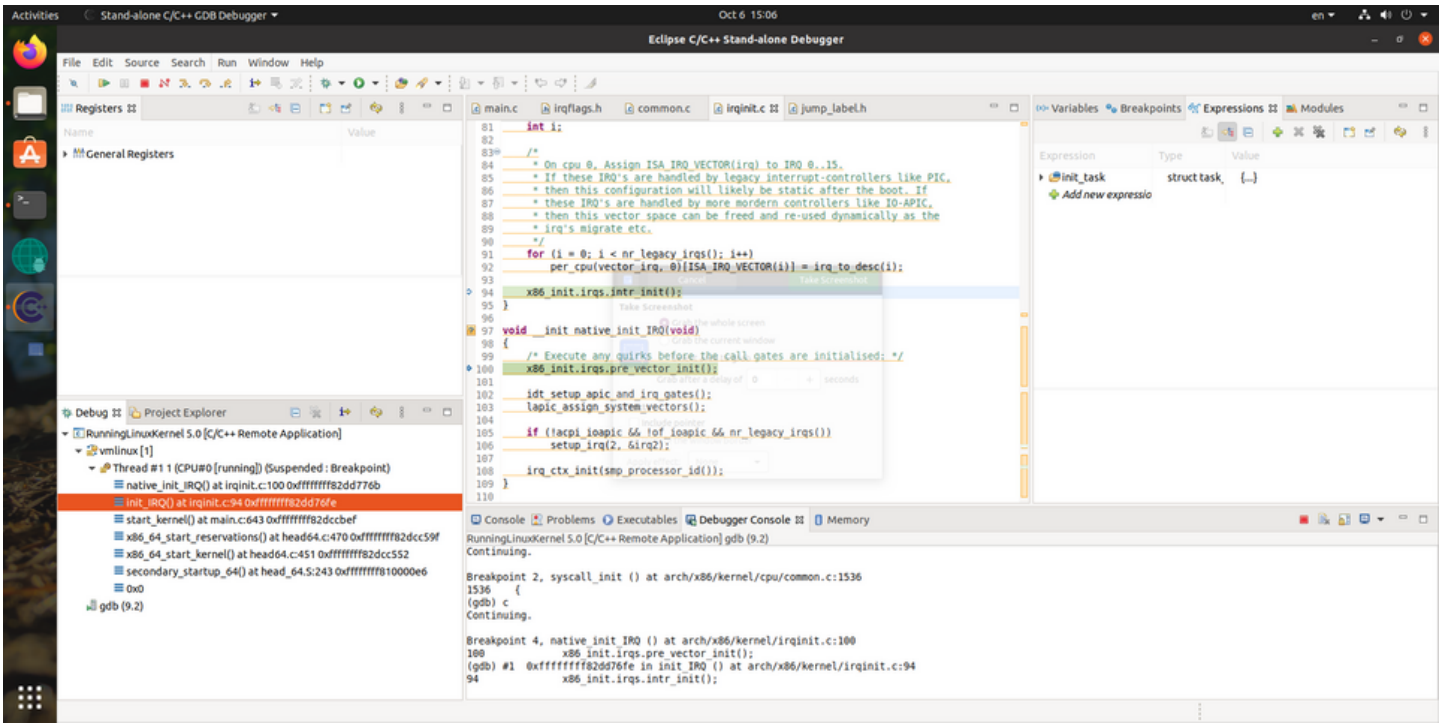
1.b trap_init



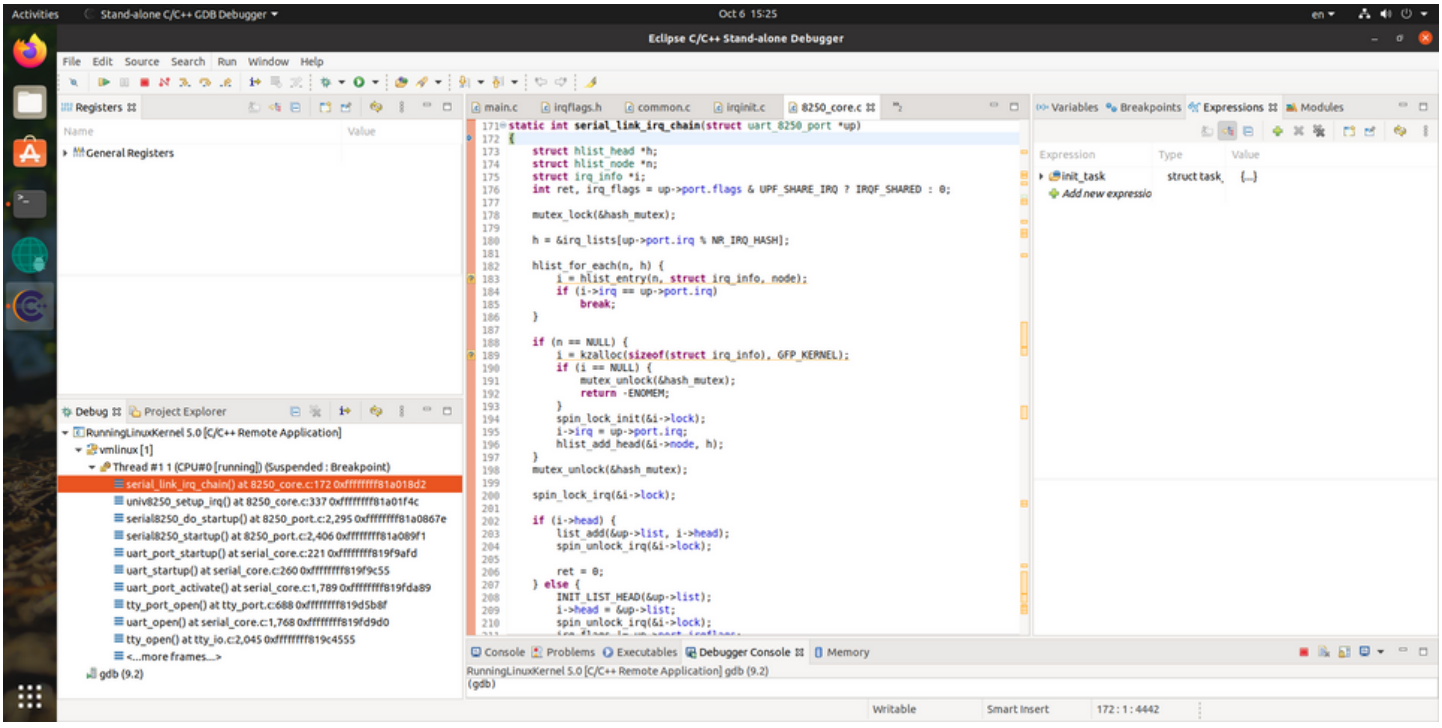
2.b init_IRQ



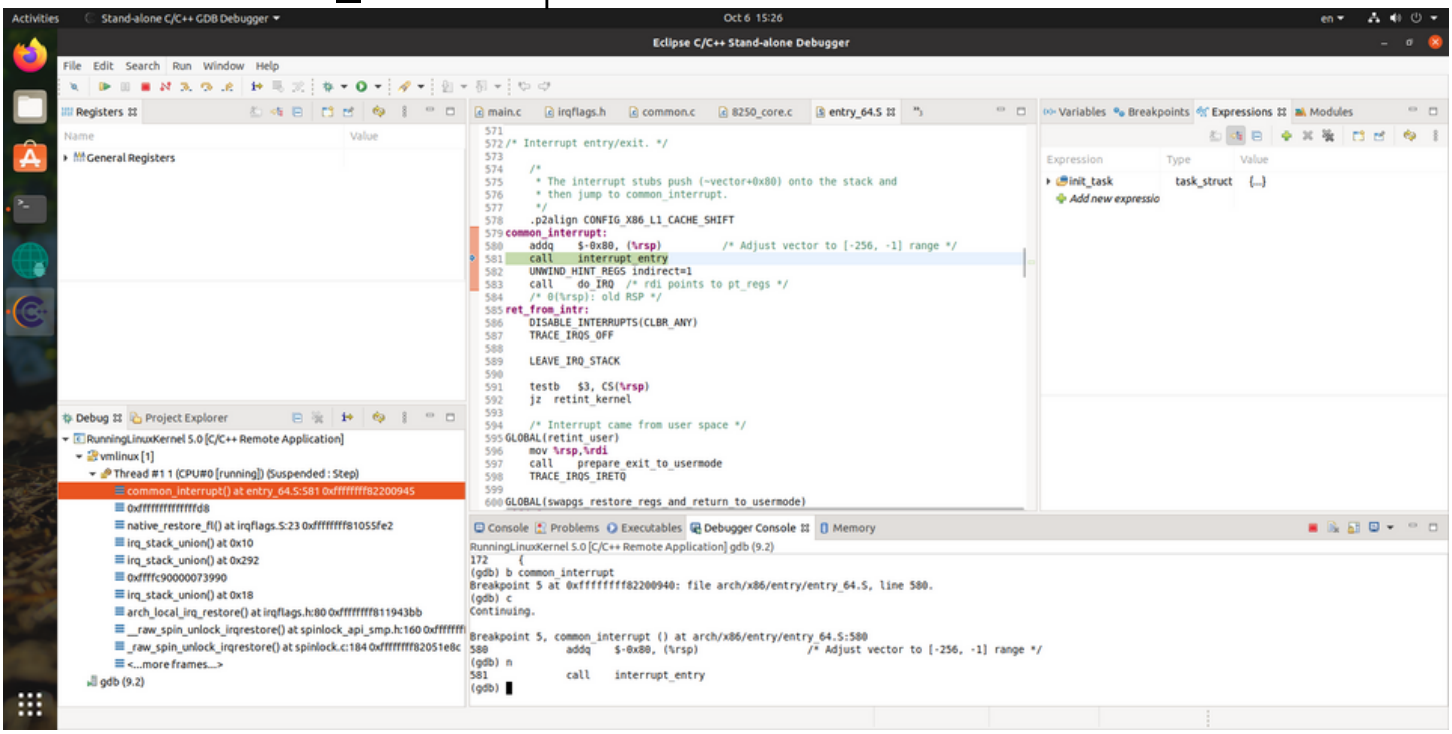
3.b native_init_IRQ



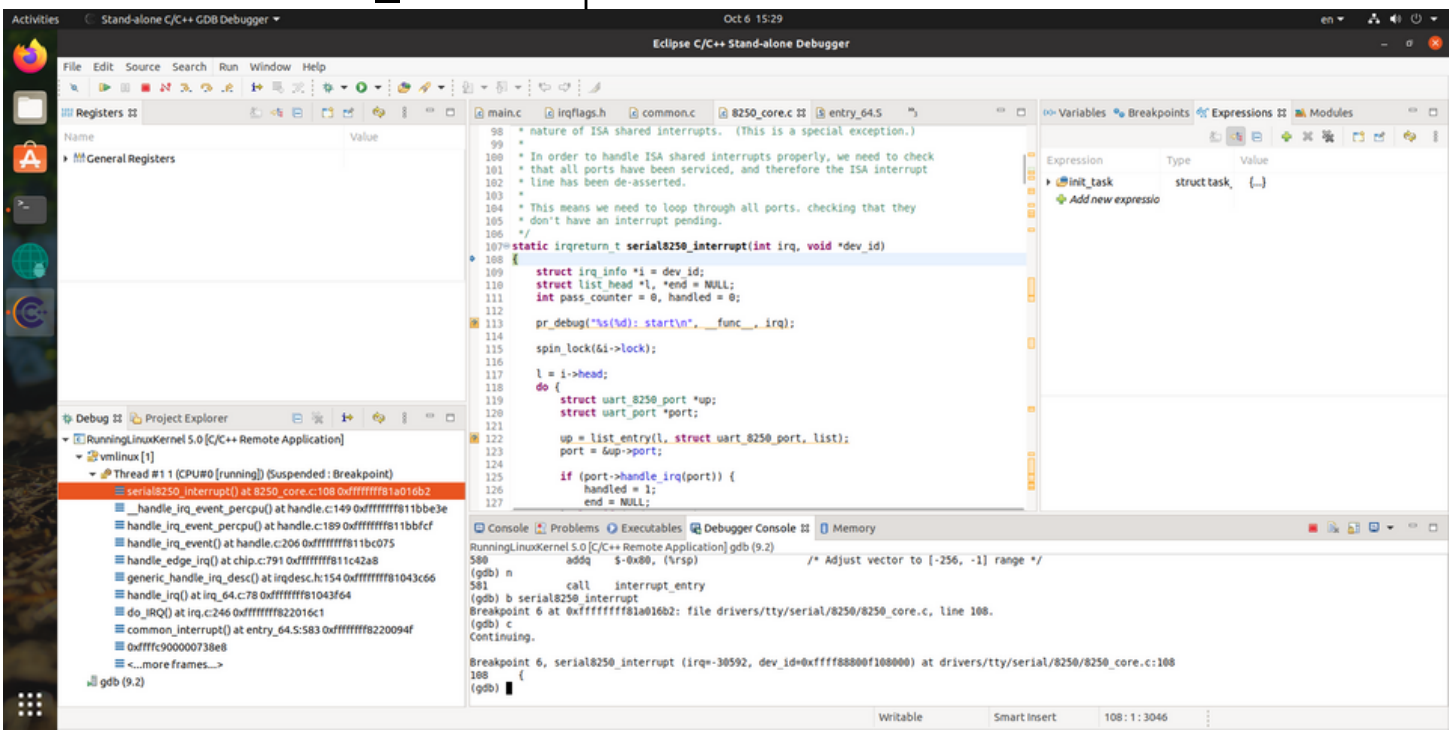
4.b serial_link_irq_chain



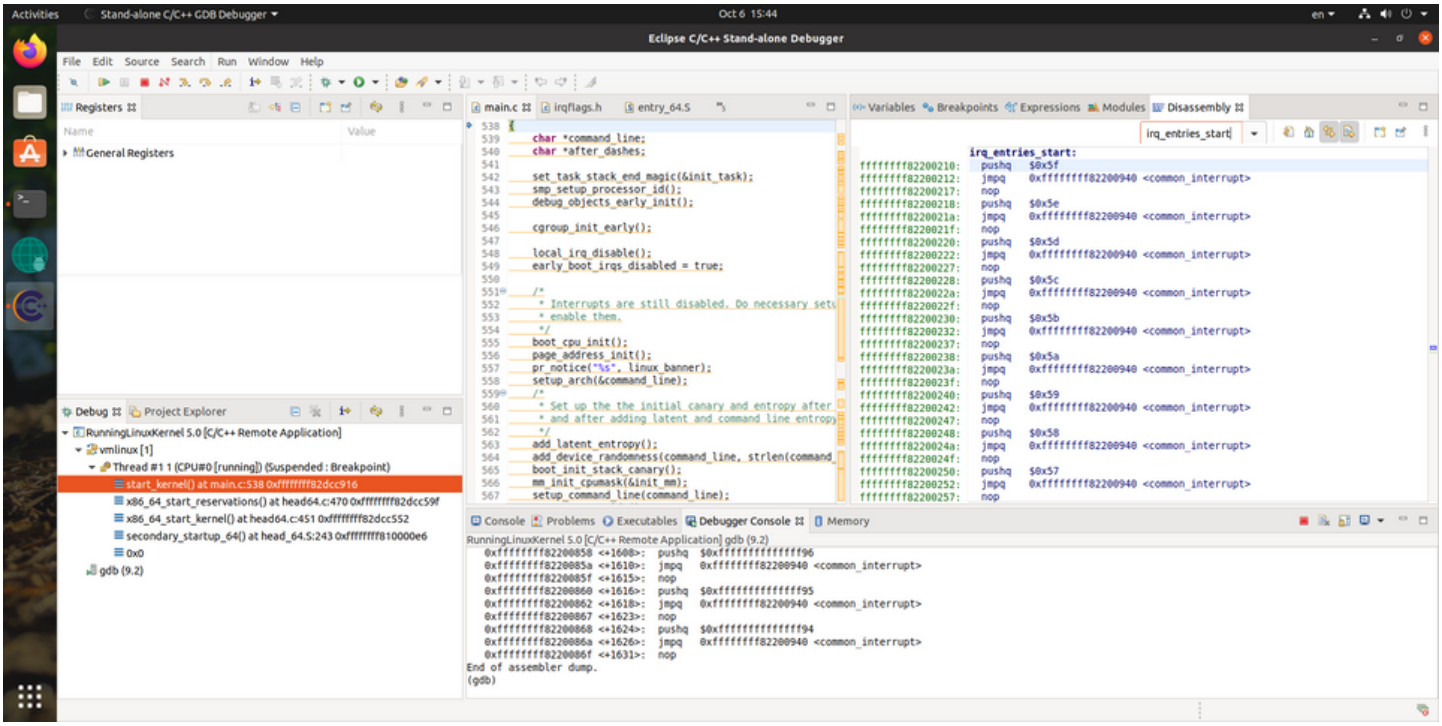
5.b common_interrupt



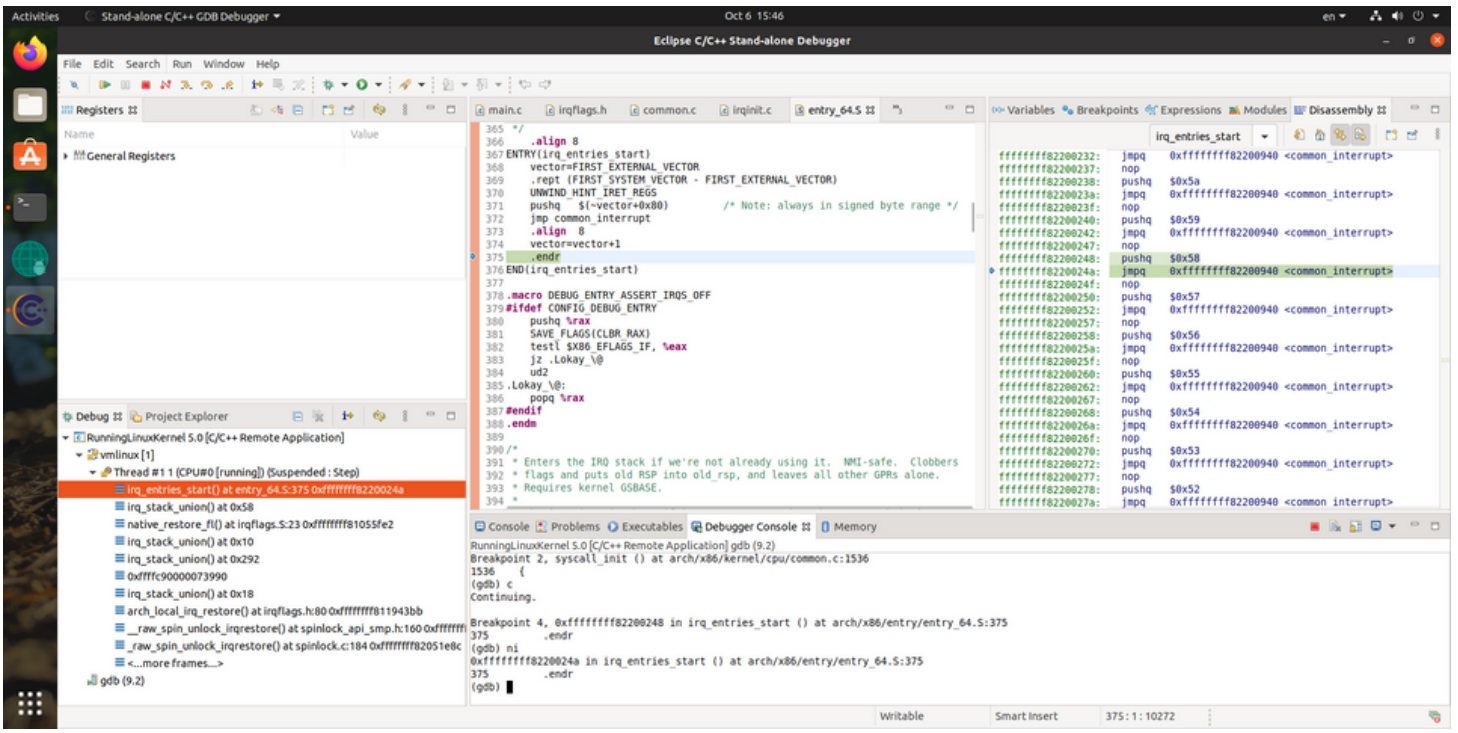
6.b serial8250_interrupt



7.disass irq_entries_start



8.b *(irq_entries_start+56)



問題2

ANS:中斷分為兩部分，第一部分為CPU內建的中斷，又稱「software interrupt」或「trap」或是「exception」。此類型的中斷在設定時Linux在start_kernel中會先呼叫trap_init，將內部中斷初始化，然後將CPU內部中斷的中斷處理函數寫入到中斷向量表(IVT)，而在此設定的中斷共有19個，其餘的內部中斷(20~31)會被Intel保留起來，日後做其他的用途。而第二部分為外部中斷，此類中斷在設定時會由init_IRQ一路呼叫到set_intr_gate。

問題3.

ANS:以serial port的中斷為例，他是第四號外部中斷，而在irq_entries_start中為「0x58」。之後呼叫common_interrupt後會先將所有暫存器存入堆疊中，其資料型態為pt_regs，並將serial port在irq_entries_start中的編號放入pt_regs的orig_ax。之後呼叫do_IRQ後，就會根據orig_ax內存放的中斷編號去呼叫相對應的函數，提供服務。