Interrupt Scenario

```
Program ABC is executing instruction_N
Program ABC is executing instruction_N+1
Program ABC is executing instruction_N+2
Processor detects an Interrupt Signal
Program ABC execution is suspended       ←
Interrupt_Service_Routine executes
Interrupt_Service_Routine executes       ←
Interrupt_Service_Routine executes
::
::
Interrupt_Service_Routine executes
Program ABC execution is resumed         ←
Program ABC is executing instruction_N+3
Program ABC is executing instruction_N+4
::
::
```

Interrupt Prerequisites

1. I/O device must need service
   - User has hit a key, so there's new data in KBDR, KBSR[15] is set
   - Display has completed output of character in DDR, DSR[15] is set
2. I/O device must be enabled to generate an interrupt signal; see **Figure 8.7**
   - KBSR[14] is set
   - DSR[14] is set
3. I/O device's process must have higher priority than any other I/O process simultaneously trying to interrupt the processor; see **Figure 8.8**
4. I/O device's process must have higher priority that the process currently running on the processor; see **Figure 8.8**