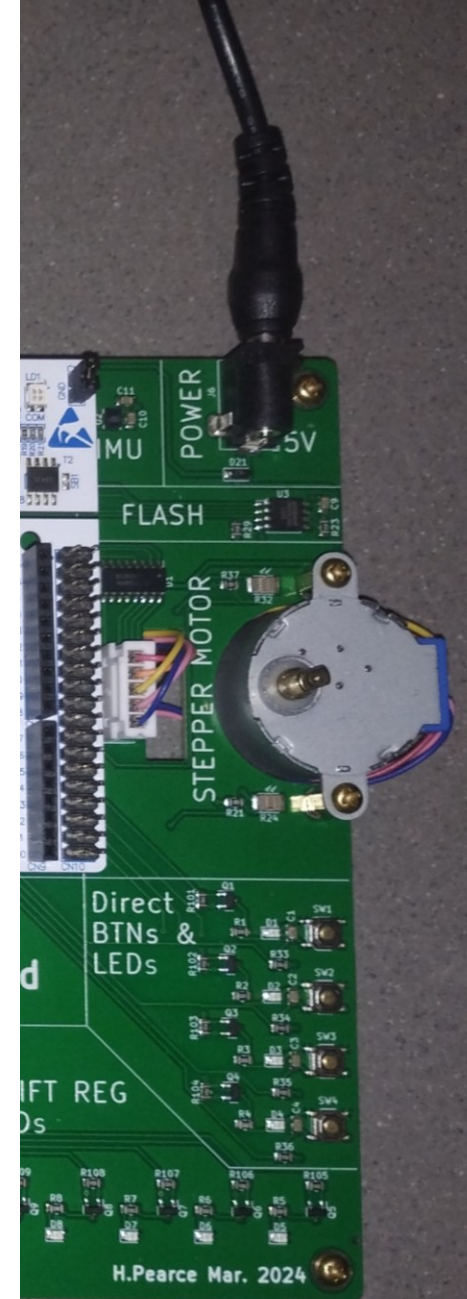


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Interrupts

Hasindu Gamaarachchi

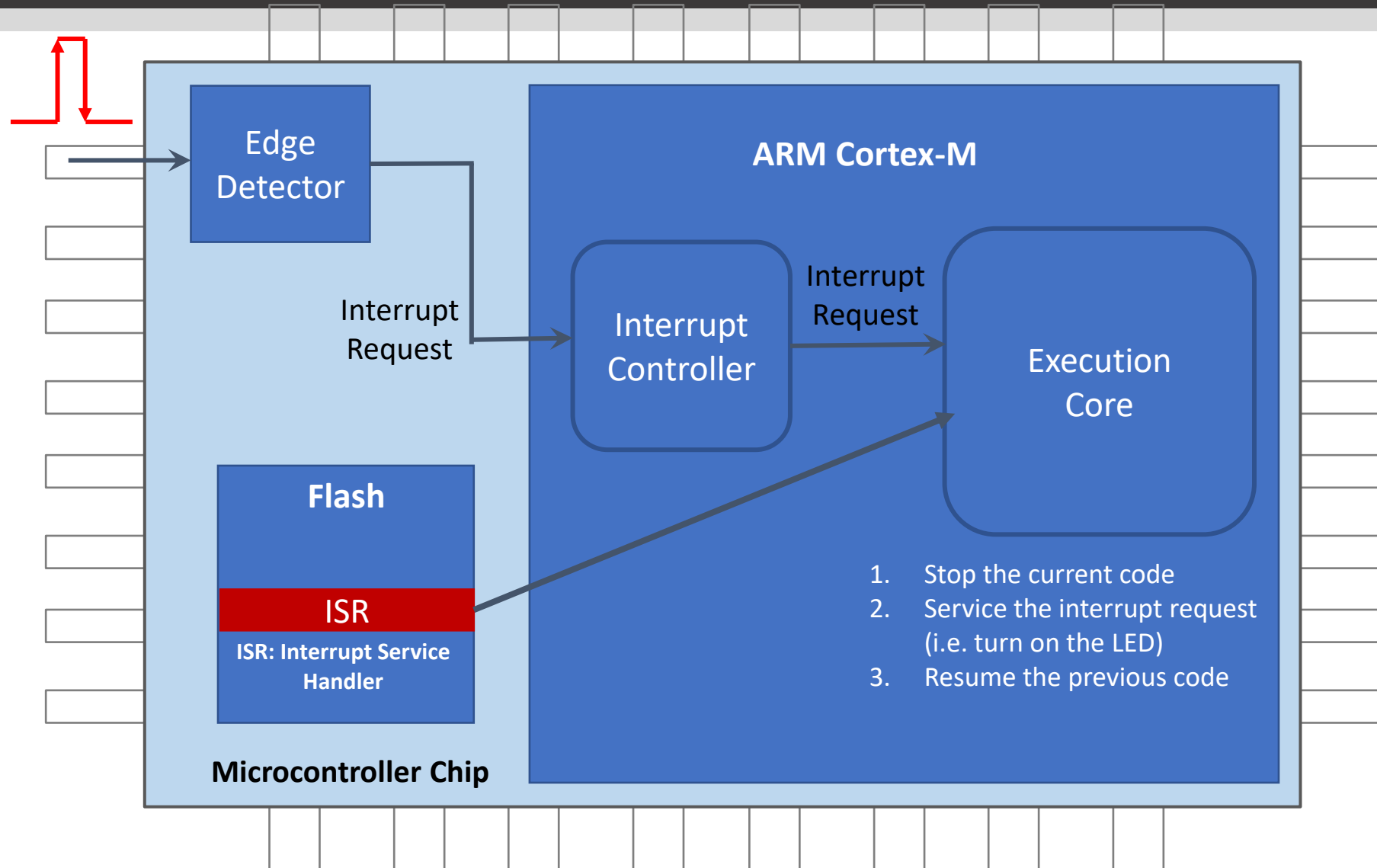


Interrupts

- Theory covered on whiteboard

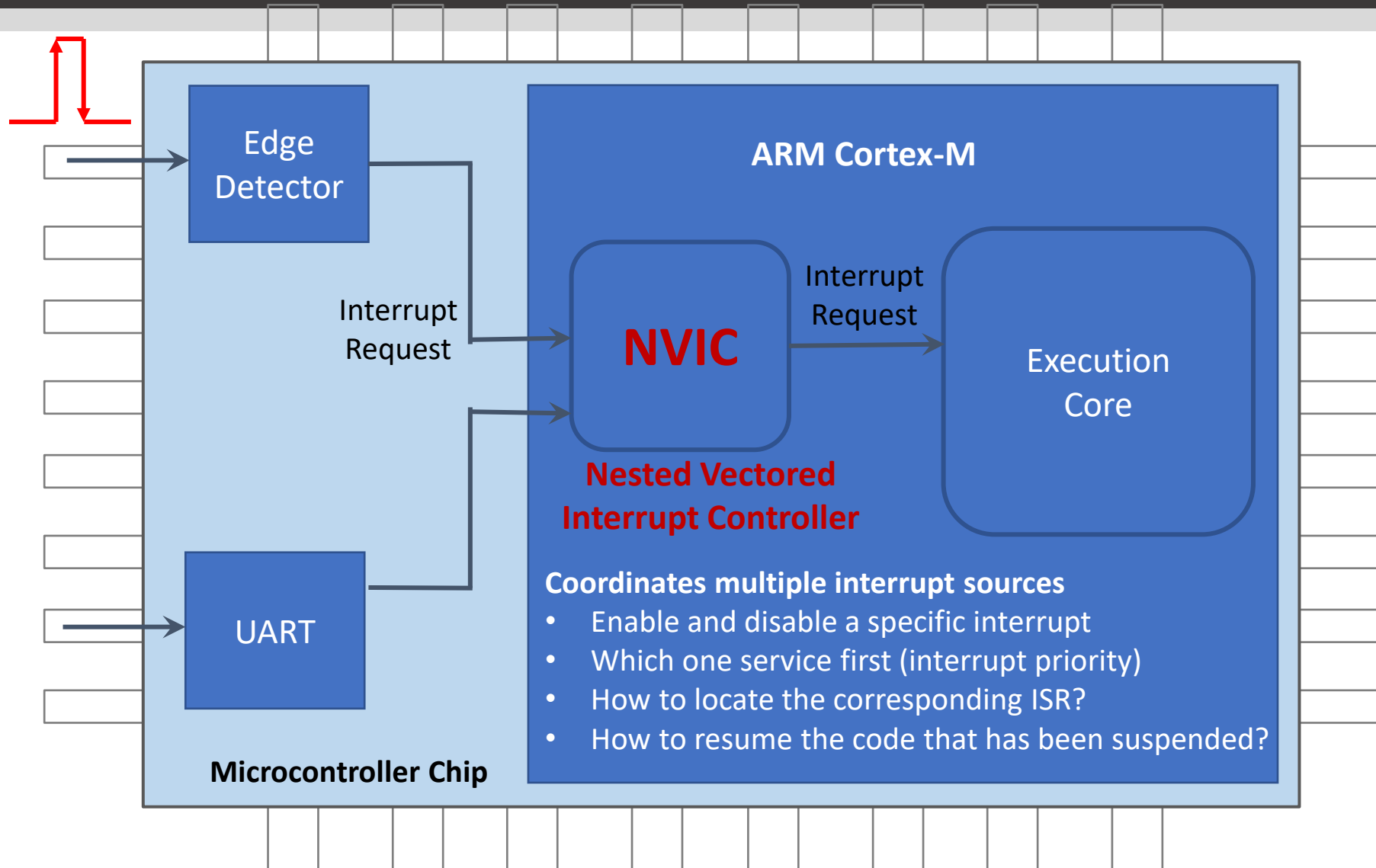
How to support interrupt?

Figure from: Yifeng Zhu, Embedded Systems with ARM Cortex-M Microcontrollers in Assembly Language and C



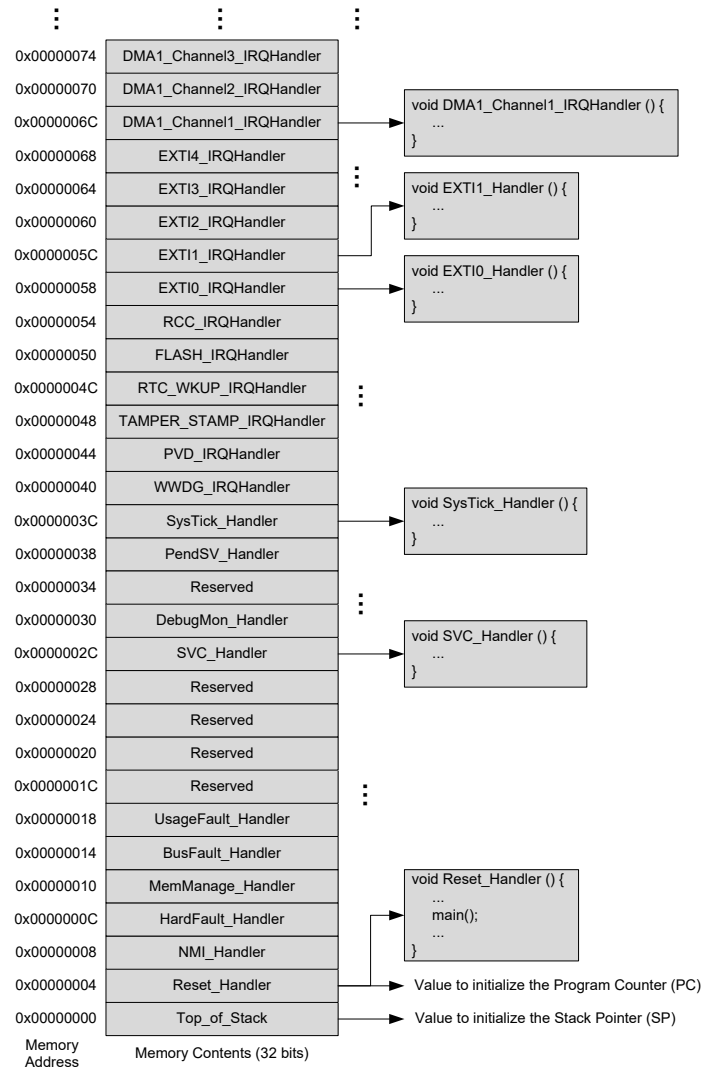
How to support interrupt?

Figure from: Yifeng Zhu, Embedded Systems with ARM Cortex-M Microcontrollers in Assembly Language and C



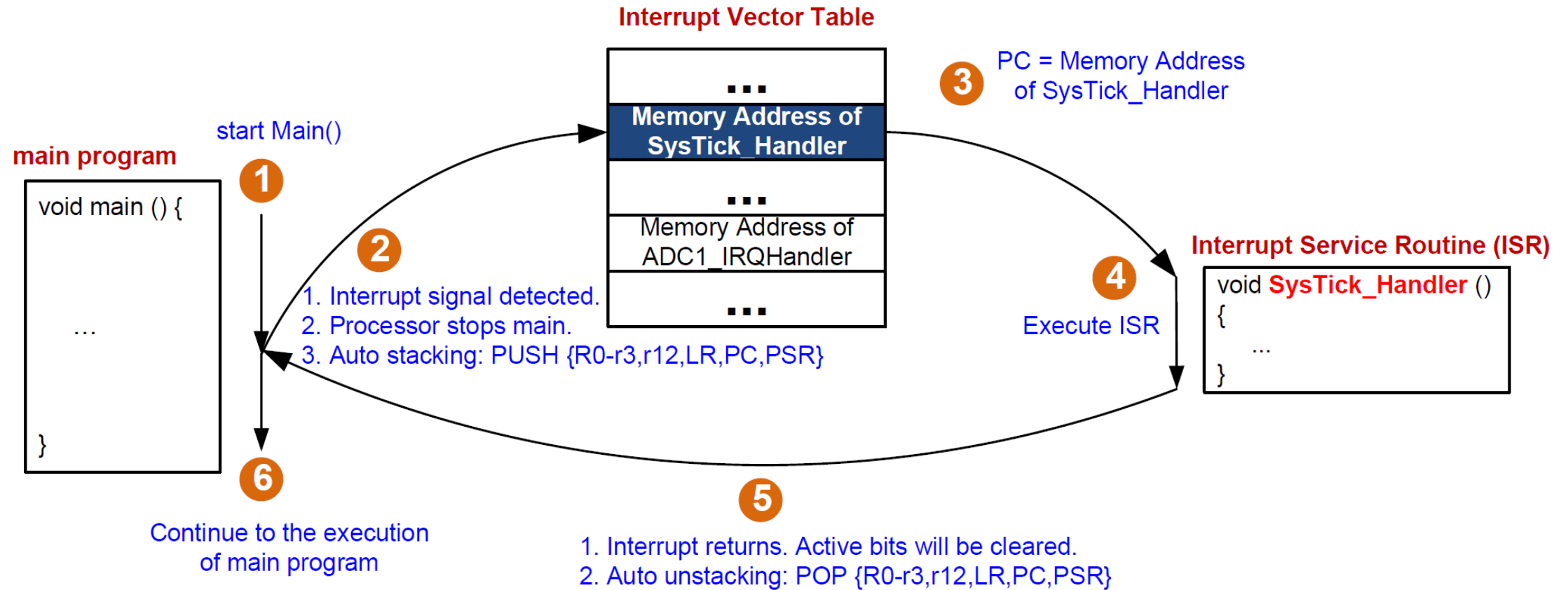
Interrupts Vector Table

Figure from: Yifeng Zhu, Embedded Systems with ARM Cortex-M Microcontrollers in Assembly Language and C



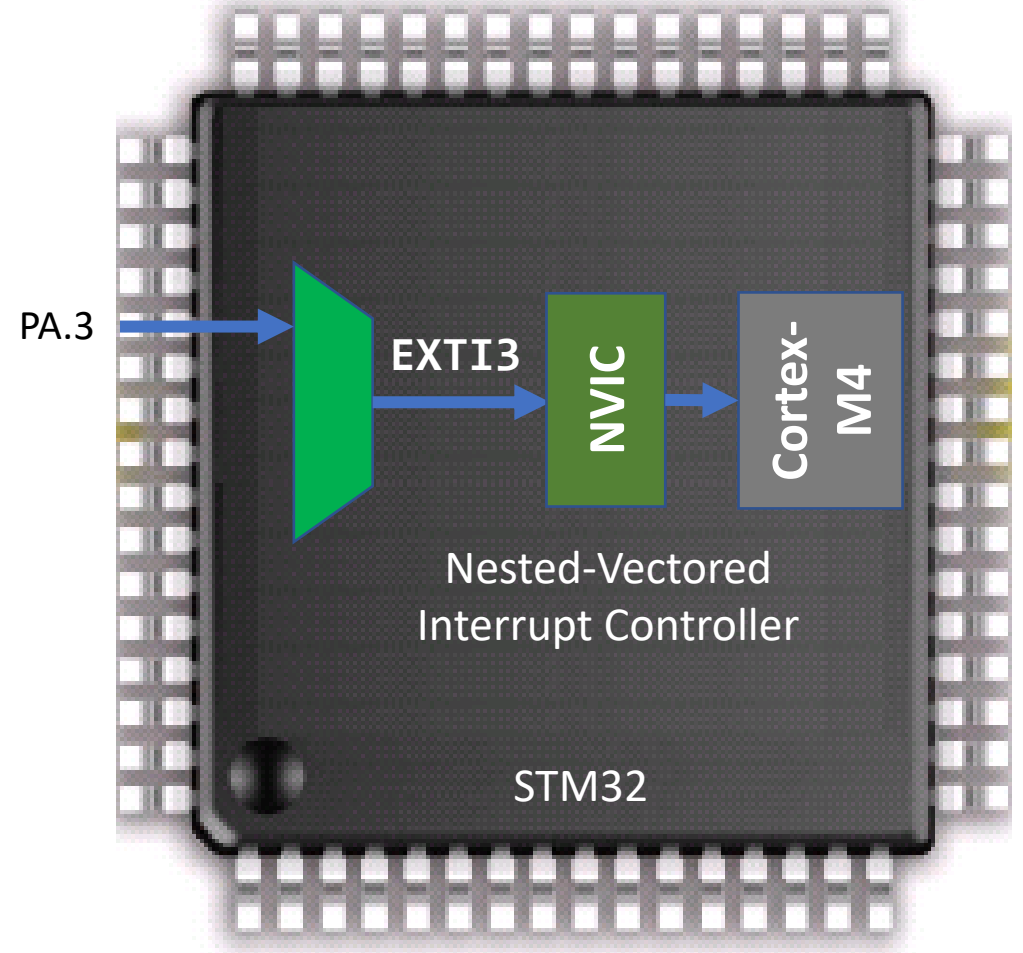
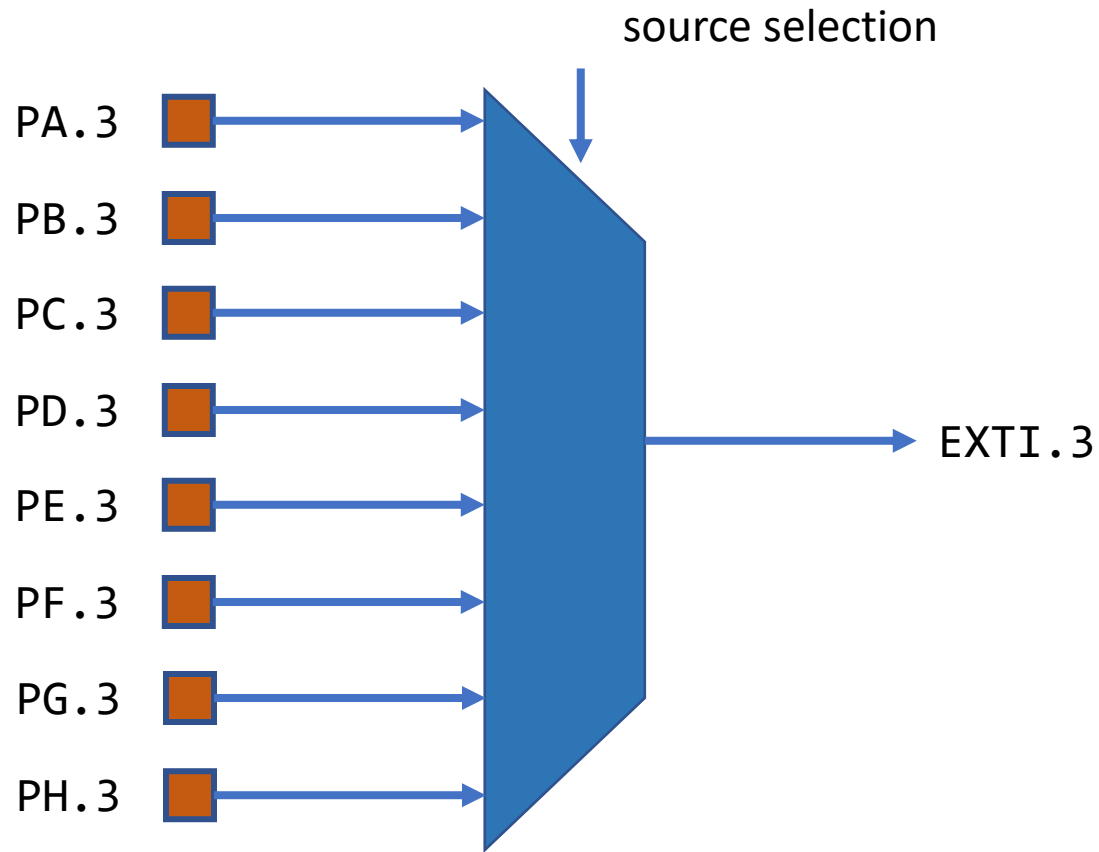
Interrupts

Figure from: Yifeng Zhu, Embedded Systems with ARM Cortex-M Microcontrollers in Assembly Language and C



External Interrupt (EXTI) Sources

Figure from: Yifeng Zhu, Embedded Systems with ARM Cortex-M Microcontrollers in Assembly Language and C



Interrupts

- Example covered as live demo

Example 1

- Write a program that uses external interrupts
 - to detect a SW1 button press and then toggle the D1 LED
 - to detect a B1 button press and then toggle the LD2 LED

Homework

- Write a program that uses external interrupts
 - to detect a B1 button press and then toggle the LD2 LED
 - to increment a counter when SW1 button is pressed and display the lower nibble on D1-D4
 - to decrement the counter when SW2 button is pressed and display the lower nibble on D1-D4

Advanced Resources

Interrupts in C and Assembly

“Embedded Systems with ARM Cortex-M Microcontrollers in Assembly Language and C (Fourth Edition)” – Yifeng Zhu

- Interrupts - chapter 11

