Circuit 5 remix -- buttons

Part 1  -  10XP
Get the basic circuit 5 working.

Part 2  -  10XP
Add another LED.
Both LEDs should blink (100ms on, 100ms off) only when both buttons are pressed.
else no LEDs will blink

Part 3  -  15XP
Implement the following logic.
if both buttons are pressed both LEDs should blink (100ms on, 100ms off)
if button 1 is pressed LED 1 should light (steady without blinking)
if button 2 is pressed LED 2 should light
if no buttons are pressed, no LEDs should be on.

Part 4  -  5XP
In addition to part 3, I want the following printed to the serial line at the correct time:
Both buttons pressed
Button 1 pressed
Button 2 pressed

DEMO

Part 5  -  15XP
Write 2 functions:
    blink - blinks both LEDs on for 100ms and off for 100ms.
    alternate - blinks 1 led on for 100ms, then turns that one off and lights the other for 100ms.
When one button is pressed blink is executed. When the other button is pressed alternate is executed.

OR Part 5  Hacker-  35XP
    add one more LED
    when one button is pressed the three LEDs blink on and off together
    when the other button is pressed they blink in turn (a chaser effect)
    when both are pressed - some other pattern - your choice. (this should be another function