# Lab Manual 11

# Hardware Interrupts

## Problems

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| Problem 1: Keyboard Interrupt Service Routine and Interrupt Chaining |  |

Write a keyboard interrupt service routine which prints the string “left shift+A pressed”on the screen while the left shift and A are being pressed together. When the buttons are released the string is removed from the screen and chains to the original kbisr. For every other key press/release, chain to the original kbisr.

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| Problem 2: KBISR for Scroll up/Scroll Down |  |

Write a keyboard interrupt service routine which scrolls up the video screen by one line when the left shift key is pressed. If the user continues to press the left shift key, keep scrolling up. When the user releases the shift key, stop scrolling. On right shift key press, do the same except this time, scroll down. (The original video screen contents must not be destroyed)

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| Problem 3: KBISR for clearing screen |  |

Write a TSR which clears the screen contents while left shift or right shift is pressed. The screen contents are restored when the shift key is released.