**SRAM Usage:**

* x0100-x0106: used for storing an array of values for Puzzle 1
* x08FF-…: Bottom of SRAM is used for the Stack. Stack is mainly used for subroutine calls and some saving of values when doing subroutine calls.

**Important Registers for my Project:**

**Special Registers:**

* ADCL/ADCH: These are registers that have to do with Analog to Digital Conversion (ADC). These registers hold the data that is pulled in from my temperature sensor
* ADMUX: This register is used in ADC. We set the values within it to set the reference voltage for generating our result of ADC and for setting the correct port as an input
* ADCSRA: This is enabling ADC and ADC Start Conversion and setting our division factor to zero. This is essentially turning on ADC for our temperature sensor.
* TCCR2A: This register is used for Pulse Width Modulation (PWM). It sets the mode for our PWM to fast PWM inverting and makes sure that we are on fast PWM.
* TCCR2B: This register is used to set our Scaler for PWM. This essentially allows us to correctly set up our Output Compare registers to values we want for our servo
* OCR2B: This register is out Output Compare Register used in PWM. We change this value to get a different pulse width, putting our servo in a different position.
* SPH/SPL: These are registers used as the stack pointers to our stack.

**I/O Registers:**

* PORTD
  + Pins 0-2: Used for the Puzzle Boxes puzzle status LEDs. These are set to outputs.
  + Pin 3: This is used for our servo. This is set to output.
  + Pins 5-7: These are used for the columns of our keypad. These are set to inputs with internal pull-up resistors.
* PORTB:
  + Pins 0-3: These are used for the rows of our keypad. These are set to outputs.
* PORTC:
  + Pin 0: This is used for our analog temperature sensor. This is set to input.
  + Pin 1: This is used for our button to turn our servo for the locking mechanism. This is set to an input with an internal pull-up resistor.
  + Pins 2-5: These are used for our Binary Number LEDs for Puzzle 3. These are set to outputs.

**General Registers:**

* The uses for these registers shifted throughout the entire program. However, the registers that were used for this code include:
  + R16
  + R17
  + R18
  + R19
  + R20
  + R21
  + R22
  + R23
  + R26-R27 (X-Register)
  + R28-R29 (Y-Register)
  + R30-R31 (Z-Register)