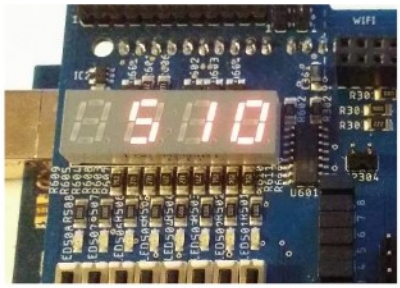
Assignment 3: 7-segment display driver

Design and implement a driver for the 4-digit 7-segment display on the VIA shield.



Requirements:

The driver must implement the following interface:

```
void init_display();
void printint_4u(uint16_t value);
```

Other requirements:

1) Update of the segments must be timer interrupt driven.
2) Source code must be documented by inline comments (incl. author name(s) and date).
3) Divide the code into logical abstraction layers. All display driver functions must be separated from application code and only interact via the above given interface.
4) Write an application that show temperature in the display (use assignment #2 driver)

Optional (not necessary to pass):

- Make a signed printint version:
  void printint_4s(int16_t value);
- Make a function to display floating-point numbers with the following interface:
  void printfloat_4f(float value, uint8_t no_of_decimals);
- Use SPI to load the display shift register.

What to hand-in:

1) Timing diagram that shows one cycle of displaying the value 510. Use the wavedrom tool: https://wavedrom.com/
2) An activity diagram of the display driver.
3) A feature update to your thermometer (previous assignment) so it also shows the temperature on the 7-segment display.
4) Entire project in a zip-archive