

# Week1 Experiments

To help you boost, have a look at few hints for Week1 Experiments:

## Experiment 1:

- Use macros defined instead of actual Register names.

For e.g. To turn ON buzzer -

instead of writing `PORTC |= (1 << 3)`

write `buzzer_port_reg |= (1 << buzzer_pin)`

- For masking, refer: Common bitmask functions section on [Link](#)

## Experiment 2:

- In the function `interrupt_switch_pressed()`, check status of single bit ONLY instead of entire Register. For more details, refer: Querying the status of a bit section on [Link](#)
- The functions `turn_on_bar_graph_led()` and `turn_off_bar_graph_led()` should be written in such a way that it will work for any given `led_pin` and not specific to any particular `led_pin` such as 2, 6, 8.

## Experiment 3:

- To convert numbers to different format, you can use `printf` statement.

You may refer to example of `printf`:

```
unsigned char value = 15;
unsigned char hex_buffer[40]
printf(hex_buffer, "Value in Hex: %04x", value);
```

Then `hex_buffer` will consist of the following string:

```
hex_buffer = "Value in Hex: 000f"
```

- For different format specifiers, refer: [Link](#)

## Experiment 4:

To get an idea of a command to be used for scrolling display, you may refer to pg. 24 of [HD44780u datasheet](#)

Above same have been posted on Piazza post: [@42](#)