

# Pre-Functions Warmup

---

1. Define each of the following:

- debugging
- printf debugging
- breakpoints
- constants, aka magic numbers

2. What is rubber duck debugging?

3. I created a program in a file called *myprogram.c* and I want to debug it using debug50. What are the 3 things I need to do in order to run debug50 properly?

4. What is the output of the following program?

```
#include <stdio.h>

int main (void)
{
    int rows = 5, number = 1;

    for (int i = 0; i <= rows; i++)
    {
        for (int j = 0; j <= i; j++)
        {
            printf("%d ", number);
            number++;
        }
        printf("\n");
    }
}
```

5. Take a look at the following code and output, can you figure out what the numbers within the `%f` mean (e.g `%.2f`)?

Code:

```
#include <stdio.h>
#define PI 3.141592

int main (void)
{
    printf("PI is %f \n", PI);
    printf("PI is %.1f \n", PI);
    printf("PI is %.2f \n", PI);
    printf("PI is %.5f \n", PI);
}
```

Output of above:

```
PI is 3.141592
PI is 3.1
PI is 3.14
PI is 3.14159
```