

# ECE 476/676 - Homework #2

*Loops, if-Statements, Subroutines - Due Monday, September 9th*

## Master-Mind

In the game of Master-Mind, you try to guess a 4-digit code with each digit in the range of 0-5. Each time you guess a number, you're told how close your guess was. For each digit in the code:

- If that digit appears in your guess in the correct spot, you get 10 points.
- If that digit appears in your guess in the incorrect spot, you get 1 point.

For example, if the code is 4444 and your guess is 1234, you would get 13 points

- The first three 4's appear in your guess but in the wrong spot (1 point each)
- The last 4 appears in your guess in the correct spot (10 points)

Write a Python program to play MasterMind.

1) Write a subroutine which returns a 4-digit number (your code)

- Start out with the code always being 1234
- Once your code works make this a random number
- Each digit is in the range of 0-5

Test your code

*Note: The following code returns a number from 0..5 (from a later lecture)*

```
from random import randrange

def Get_Code():
    X = randrange(6)
    return(X)
```

2) Write a subroutine which

- Is passed two numbers (your guess and the code), and
- Returns your score

10-points for each digit in the code that's in the correct spot, 1 point for each digit in the code that's in the wrong spot

Test your subroutine.

3) Write a program which

- Starts by generating a code (problem #1)
- Then prompts you for a guess (0000 to 5555)
- Scores your guess and tells you your score,
- Keeps playing until your score is 40 (correct code), and
- Keeps track of how many guesses it took you

Test your code.

4) Demo your Master-Mind program

- In-Person or a short video works