

**Project #1**  
**Part b**

In the second part of the project, complete the program that allows a user to play Mastermind against the computer.

1. Add the function `checkIncorrect` to the `code` class. The function is passed a guess as a parameter and returns the number of correct digits in the incorrect location. *No digit in the guess or the code should be counted more than once.*
2. Implement the class `mastermind` which handles the playing of the game. The `mastermind` class should have a `code` object as a data member.
3. Write an overloaded output operator `<<` that prints the secret code in a `code` object, and an output operator that prints vectors.
4. The `mastermind` class should include at least two constructors to initialize the game. One constructor is passed values of  $n$  and  $m$  that were read from the keyboard, and the other constructor is passed no parameters and uses default values for  $n$  and  $m$ .
5. Check the inputs to every function and throw exceptions wherever errors are detected. Every exception should be caught, should print an appropriate error message, and should cause the execution of the program to halt using the `exit(0)` command.

The version of the program you submit should print the secret code to the screen before the game starts. We will use this information to see if your program is working correctly.