

## Project Mastermind

### Part b

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

1. Implement the class **response** which stores the response to a guess (number correct and number incorrect), and which includes:
  - (a) a constructor,
  - (b) functions to set and get the individual stored values within a response,
  - (c) an overloaded operator `==` that compares responses and returns true if they are equal (global),
  - (d) an overloaded operator `<<` that prints a response (global).
2. Implement the class **mastermind** which handles the playing of the game, and which includes:
  - (a) a **code** object as a data member,
  - (b) 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  $n = 5$  and  $m = 10$ ,
  - (c) a function that prints the secret code,
  - (d) a function **humanGuess()** that reads a guess from the keyboard and returns a code object that represents the guess,
  - (e) a function **getResponse()** that is passed one code (a guess code), and returns a response,
  - (f) a function **isSolved()** that is passed a response and returns true if the response indicates that the board has been solved.
  - (g) a function **playGame()** that initializes a random code, prints it to the screen, and then iteratively gets a guess from the user and prints the response until either the codemaker or the codebreaker has won.
3. Implement a function **main()** which initializes a **mastermind** object and then calls **playGame()**. The version of the code you submit should print the secret code to the screen to help us test your code.