Lab 16
Mastermind

Objective:

To reinforce skills in defining and manipulating `arrays,` and introduce the `vector` class.

Assignment:

Mastermind is a game requiring skill and analytical thinking. Normally, Mastermind includes a board and different colored pegs lined up in a particular order. In this version, the computer will randomly place four numbers (chosen from the numerals 1–6, allowing duplication) in a `one-dimensional array` and then ask the player to input four numbers until all four numbers are correctly guessed in the right order.

Of course, you will have to make sure the computer helps the player along a bit. After the player inputs a guess, the computer should analyze it and tell the player (a) how many of his or her guessed digits were correct, but in the wrong place, and (b) how many of the guessed digits were correct and in the right place. This can be done by using functions that compare the guess with the actual `array` of integers, looking for matches.

Remember the minimum requirement is two functions other than `main`. Each function should perform a single task.

Sample Run:

```
Welcome to Mastermind

Please enter your four numerical guesses (space separated): 2 4 3 1

You have 2 correct number(s) and 1 correct location(s).

Please enter your four numerical guesses (space separated): 4 5 3 2

Correct!

You are a MasterMind!
```

Hint:

When you are comparing the actual numbers to the user's guesses, it may be easiest to use a copy of the array containing the user's guesses. Then, each time you find a match (either exact or in the wrong location), change that guess to a `-1`. This way, you won't end up counting a single guess more than once.