**Task 1: Creating a vector to guess**

Variables:

* int rseed
* vector<int> vals
* vector<int> numRefs

Calculations:

Random number generator

Procedures:

* Get seed number from user
* Create a vector with 4 random values with no digits being the same

Output:

* Number to guess

**Task 2: Get a valid guess integer from the user**

Variables:

- int userGuess

Procedures:

* Get input integer from the user
* If the input is not int, then ask again

**Task 3: Making sure that the user input has less than 4 digits**

Variables:

* vector<int> userG
* int userGuess

Procedures:

* If user guess has more than 9999, ask again
* If the user guess is less than 999, replace the missing digits with zeros
* Convert the correct input to a vector

**Task 4: Making sure that the user input digits are not repeated**

Variables:

* vector<int> userG
* int userGuess
* char a
* char b
* char c

Procedures:

* With a series of for loops and conditionals, check to see if userG at index i is the same at any other location
* Convert the correct input to a vector

**Task 5: Checking to see for bulls and cows**

Variables:

* int bulls
* int cows
* vector<int> vals
* vector<int> userG

Procedures:

* if userG at i matches vals at j, and i does not equal j, then add one to cows
* if userG at i matches vals at j, and i equals j, then add one to bulls
* if 4 bulls, then game over

Output:

* bulls and cows
* winning guess

**Task 6: Play again**

Variables:

* char userIn

Procedures:

* ask user if they want to play again
* if the anser is ‘y’, then play game again, otherwise, end game

Output:

* Goodbye