

FindMe.java

Background and Information:

The game of **FindMe** (TM) is played by a single player against the computer. In this game the program starts by filling an array of 4 ints with random numbers from 1 to 9 (use the **Dice** class). The goal of the game is to guess these random numbers, in order. The user is prompted to enter a 4-digit number, and the input is checked to make sure it is within the range from 1000 to 9999 (use the **Prompt** class), and contains no 0's. The number entered should then be broken up into digits, and placed into an array of 4 ints (the guesses). Recall that $1234 \% 10 = 4$, and $1234 / 10 = 123$ (so % by 10 and / by 10 should be useful here). Then, the user is informed of the number of exact digit matches, and the number of partial digit matches. For these matches, exact + partial may not exceed 4, because a match may be exact or it may be partial, but it cannot be both. The user continues to make guesses until four exact matches are made. Once the puzzle is solved, the game ends, with an exit message, informing the user of how many guesses it took to find the pattern. See the sample run outputs for detailed formatting information.

Assignment:

1. Write the class **FindMe** (in the text file FindMe.java). Your program should play the game of **FindMe**. The game should be played as described above. In addition, if the program is run with the word "show" included with the program run, then the "MASTER KEY" should be shown before each turn. This will allow you to run the game in a "debug mode", to help you more easily check for errors. So, you should be able to run the game with:

```
C: \Java> java FindMe
```

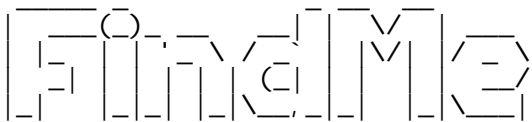
and it will run a regular game. However, if you run the game with:

```
C: \Java> java FindMe show
```

then the game will play showing the "MASTER KEY" before every user turn. See the sample run outputs for more detailed formatting information. The first two sample run outputs use "java FindMe show", and the last two sample run outputs use "java FindMe". Also, see the "starter code" at drootr.com.

Sample Run Outputs:

```
C: \Java> java FindMe show
```



Welcome to the game of FINDME (TM). In this game, an array of 4 ints (the master array) is filled with random numbers from 1 to 9. The goal of the game is to guess these random numbers, in order. The user is prompted to enter a 4-digit number, and the input is checked to make sure it is within the range from 1000 to 9999, and contains no 0's. Then, the user is informed of the number of exact digit matches, and the number of partial digit matches. For these matches, exact + partial may not exceed 4, because a match may be exact or it may be partial, but it cannot be both. The user continues to make guesses until four exact matches are made. Once the puzzle is solved, the game ends, with an exit message, informing the user of how many guesses it took to find the pattern. See the sample run outputs for detailed formatting information.

```
THE MASTER KEY HAS BEEN CHOSEN. LET THE GAME BEGIN . . .
```

HERE IS THE MASTER KEY: 3298
Please enter an integer value, with no zero digits (from 1000 to 9999): 9883

YOUR GUESS : 9883
Exact Matches : 0
Partial Matches: 3

HERE IS THE MASTER KEY: 3298
Please enter an integer value, with no zero digits (from 1000 to 9999): 2333

YOUR GUESS : 2333
Exact Matches : 0
Partial Matches: 2

HERE IS THE MASTER KEY: 3298
Please enter an integer value, with no zero digits (from 1000 to 9999): 11111
Please enter an integer value, with no zero digits (from 1000 to 9999): 1098
Please enter an integer value, with no zero digits (from 1000 to 9999):
Please enter an integer value, with no zero digits (from 1000 to 9999): 92354
Please enter an integer value, with no zero digits (from 1000 to 9999): 2389

YOUR GUESS : 2389
Exact Matches : 0
Partial Matches: 4

HERE IS THE MASTER KEY: 3298
Please enter an integer value, with no zero digits (from 1000 to 9999): 3982

YOUR GUESS : 3982
Exact Matches : 1
Partial Matches: 3

HERE IS THE MASTER KEY: 3298
Please enter an integer value, with no zero digits (from 1000 to 9999): ; anehrpi anhe
Please enter an integer value, with no zero digits (from 1000 to 9999): alj sn
Please enter an integer value, with no zero digits (from 1000 to 9999): 4556

YOUR GUESS : 4556
Exact Matches : 0
Partial Matches: 0

HERE IS THE MASTER KEY: 3298
Please enter an integer value, with no zero digits (from 1000 to 9999): 3298

YOUR GUESS : 3298
Exact Matches : 4
Partial Matches: 0

Congratulations! You found the master key.

```
+-----+  
| 3 2 9 8 |  
+-----+
```

It took you 6 guesses to find it.
Goodbye for now, and please play again . . .

C:\Java> java FindMe show

FINDME

Welcome to the game of FINDME (TM). In this game, an array of 4 ints (the master array) is filled with random numbers from 1 to 9. The goal of the game is to guess these random numbers, in order. The user is prompted to enter a 4-digit number, and the input is checked to make sure it is within the range from 1000 to 9999, and contains no 0's. Then, the user is informed of the number of exact digit matches, and the number of partial digit matches. For these matches, exact + partial may not exceed 4, because a match may be exact or it may be partial, but it cannot be both. The user continues to make guesses until four exact matches are made. Once the puzzle is solved, the game ends, with an exit message, informing the user of how many guesses it took to find the pattern. See the sample run outputs for detailed formatting information.

THE MASTER KEY HAS BEEN CHOSEN. LET THE GAME BEGIN . . .

HERE IS THE MASTER KEY: 6155
Please enter an integer value, with no zero digits (from 1000 to 9999): 5531
YOUR GUESS : 5531
Exact Matches : 0
Partial Matches: 3

HERE IS THE MASTER KEY: 6155
Please enter an integer value, with no zero digits (from 1000 to 9999): 7788
YOUR GUESS : 7788
Exact Matches : 0
Partial Matches: 0

HERE IS THE MASTER KEY: 6155
Please enter an integer value, with no zero digits (from 1000 to 9999): 6611
YOUR GUESS : 6611
Exact Matches : 1
Partial Matches: 1

HERE IS THE MASTER KEY: 6155
Please enter an integer value, with no zero digits (from 1000 to 9999): 6666
YOUR GUESS : 6666
Exact Matches : 1
Partial Matches: 0

HERE IS THE MASTER KEY: 6155
Please enter an integer value, with no zero digits (from 1000 to 9999): asraerb
Please enter an integer value, with no zero digits (from 1000 to 9999): 2390
Please enter an integer value, with no zero digits (from 1000 to 9999): 6034
Please enter an integer value, with no zero digits (from 1000 to 9999): 0987
Please enter an integer value, with no zero digits (from 1000 to 9999): 4558
YOUR GUESS : 4558
Exact Matches : 1
Partial Matches: 1

HERE IS THE MASTER KEY: 6155
Please enter an integer value, with no zero digits (from 1000 to 9999): 1234

YOUR GUESS : 1234
Exact Matches : 0
Partial Matches: 1

HERE IS THE MASTER KEY: 6155
Please enter an integer value, with no zero digits (from 1000 to 9999): 5678

YOUR GUESS : 5678
Exact Matches : 0
Partial Matches: 2

HERE IS THE MASTER KEY: 6155
Please enter an integer value, with no zero digits (from 1000 to 9999): 9870
Please enter an integer value, with no zero digits (from 1000 to 9999): 23521435
Please enter an integer value, with no zero digits (from 1000 to 9999): 123
Please enter an integer value, with no zero digits (from 1000 to 9999): 6154

YOUR GUESS : 6154
Exact Matches : 3
Partial Matches: 0

HERE IS THE MASTER KEY: 6155
Please enter an integer value, with no zero digits (from 1000 to 9999): 1155

YOUR GUESS : 1155
Exact Matches : 3
Partial Matches: 0

HERE IS THE MASTER KEY: 6155
Please enter an integer value, with no zero digits (from 1000 to 9999): 1115

YOUR GUESS : 1115
Exact Matches : 2
Partial Matches: 0

HERE IS THE MASTER KEY: 6155
Please enter an integer value, with no zero digits (from 1000 to 9999): 6155

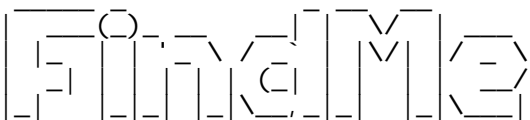
YOUR GUESS : 6155
Exact Matches : 4
Partial Matches: 0

Congratulations! You found the master key.

```
+-----+  
| 6 1 5 5 |  
+-----+
```

It took you 11 guesses to find it.
Goodbye for now, and please play again . . .

C:\Java> java FindMe



Welcome to the game of FINDME (TM). In this game, an array of 4 ints (the master array)

is filled with random numbers from 1 to 9. The goal of the game is to guess these random numbers, in order. The user is prompted to enter a 4-digit number, and the input is checked to make sure it is within the range from 1000 to 9999, and contains no 0's. Then, the user is informed of the number of exact digit matches, and the number of partial digit matches. For these matches, exact + partial may not exceed 4, because a match may be exact or it may be partial, but it cannot be both. The user continues to make guesses until four exact matches are made. Once the puzzle is solved, the game ends, with an exit message, informing the user of how many guesses it took to find the pattern. See the sample run outputs for detailed formatting information.

THE MASTER KEY HAS BEEN CHOSEN. LET THE GAME BEGIN . . .

Please enter an integer value, with no zero digits (from 1000 to 9999): 1122

YOUR GUESS : 1122
Exact Matches : 0
Partial Matches: 0

Please enter an integer value, with no zero digits (from 1000 to 9999): 3344

YOUR GUESS : 3344
Exact Matches : 0
Partial Matches: 0

Please enter an integer value, with no zero digits (from 1000 to 9999): 5566

YOUR GUESS : 5566
Exact Matches : 1
Partial Matches: 0

Please enter an integer value, with no zero digits (from 1000 to 9999): 5777

YOUR GUESS : 5777
Exact Matches : 1
Partial Matches: 1

Please enter an integer value, with no zero digits (from 1000 to 9999): 8578

YOUR GUESS : 8578
Exact Matches : 1
Partial Matches: 1

Please enter an integer value, with no zero digits (from 1000 to 9999): 9597

YOUR GUESS : 9597
Exact Matches : 0
Partial Matches: 1

Please enter an integer value, with no zero digits (from 1000 to 9999): 8776

YOUR GUESS : 8776
Exact Matches : 2
Partial Matches: 2

Please enter an integer value, with no zero digits (from 1000 to 9999): 8767

YOUR GUESS : 8767
Exact Matches : 0
Partial Matches: 4

Please enter an integer value, with no zero digits (from 1000 to 9999): 7876

YOUR GUESS : 7876
Exact Matches : 4
Partial Matches: 0

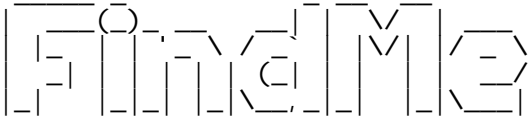
Congratulations! You found the master key.

```
+-----+  
| 7 8 7 6 |
```

+-----+

It took you 9 guesses to find it.
Goodbye for now, and please play again . . .

C:\Java> java FindMe



Welcome to the game of FINDME (TM). In this game, an array of 4 ints (the master array) is filled with random numbers from 1 to 9. The goal of the game is to guess these random numbers, in order. The user is prompted to enter a 4-digit number, and the input is checked to make sure it is within the range from 1000 to 9999, and contains no 0's. Then, the user is informed of the number of exact digit matches, and the number of partial digit matches. For these matches, exact + partial may not exceed 4, because a match may be exact or it may be partial, but it cannot be both. The user continues to make guesses until four exact matches are made. Once the puzzle is solved, the game ends, with an exit message, informing the user of how many guesses it took to find the pattern. See the sample run outputs for detailed formatting information.

THE MASTER KEY HAS BEEN CHOSEN. LET THE GAME BEGIN . . .

Please enter an integer value, with no zero digits (from 1000 to 9999): 9988

YOUR GUESS : 9988
Exact Matches : 1
Partial Matches: 1

Please enter an integer value, with no zero digits (from 1000 to 9999): 7997

YOUR GUESS : 7997
Exact Matches : 0
Partial Matches: 1

Please enter an integer value, with no zero digits (from 1000 to 9999): 8888

YOUR GUESS : 8888
Exact Matches : 1
Partial Matches: 0

Please enter an integer value, with no zero digits (from 1000 to 9999): 9866

YOUR GUESS : 9866
Exact Matches : 0
Partial Matches: 2

Please enter an integer value, with no zero digits (from 1000 to 9999): 5598

YOUR GUESS : 5598
Exact Matches : 0
Partial Matches: 2

Please enter an integer value, with no zero digits (from 1000 to 9999): 4984

YOUR GUESS : 4984
Exact Matches : 1
Partial Matches: 1

Please enter an integer value, with no zero digits (from 1000 to 9999): 8933

YOUR GUESS : 8933
Exact Matches : 0
Partial Matches: 3

Please enter an integer value, with no zero digits (from 1000 to 9999): 2389

YOUR GUESS : 2389
Exact Matches : 2
Partial Matches: 1

Please enter an integer value, with no zero digits (from 1000 to 9999): 1938

YOUR GUESS : 1938
Exact Matches : 0
Partial Matches: 4

Please enter an integer value, with no zero digits (from 1000 to 9999): 9138

YOUR GUESS : 9138
Exact Matches : 1
Partial Matches: 3

Please enter an integer value, with no zero digits (from 1000 to 9999): 9813

YOUR GUESS : 9813
Exact Matches : 0
Partial Matches: 4

Please enter an integer value, with no zero digits (from 1000 to 9999): 3189

YOUR GUESS : 3189
Exact Matches : 4
Partial Matches: 0

Congratulations! You found the master key.

```
+-----+  
| 3 1 8 9 |  
+-----+
```

It took you 12 guesses to find it.
Goodbye for now, and please play again . . .

C: \Java>