

Unit Five Assignment Two:

In this assignment you are to simulate a simplified version of the Iowa Lottery Game. First, develop a Lottery class. It must have two instance fields: an `int[]` to hold the 5 unique numbers between 1 and 59 inclusive and an `int` to hold the Power Ball number between 1 and 35 inclusive. In a default constructor these two instance fields should be initialized. You may use either technique discussed in the lecture notes to guarantee the first 5 numbers are all different. The Power Ball number may match one of the first 5 numbers. You must also have a method: `public int check(int[] nums, int pb)` that will check how many player numbers match the actual Lottery numbers. This method returns how much the player has won based on the following rules:

Match 5 numbers and Match the Power Ball:	return 1000000
Match 5 numbers and don't Match the Power Ball:	return 500000
Match 4 numbers and Match the Power Ball:	return 10000
Match 4 numbers and don't Match the Power Ball:	return 100
Match 3 numbers and Match the Power Ball:	return 100
Match 3 numbers and don't Match the Power Ball:	return 7
Match 2 numbers and Match the Power Ball:	return 7
Match 1 number and Match the Power Ball:	return 4
Match only the Power Ball:	return 4
None of these Matches are present:	return 0

The Lottery class should also have accessor methods for each of the instance fields.

Second, develop a driver class (an application) that will construct one Lottery object and print out the numbers. Then have it simulate one million people playing the Lottery. Just like when you randomly generated the Lottery's numbers, a player's first 5 numbers must all be different and the player's Power Ball number may match one of the first 5 numbers. If a player wins \$10,000 or more you must print out their numbers and their winnings. Otherwise, just keep track of how many \$4, \$7, \$100, \$10,000, \$500,000, and \$1,000,000 winners there are. Your output should look like the output displayed on the next page. The output you submit with Lottery.java and U5A2.java must have at least one person winning \$10,000 or more.

This Week's Numbers Are:

3 37 46 15 13 32

Player #137949 wins: \$10000

4 15 13 3 37 32

Player #494425 wins: \$500000

15 46 3 37 13 24

Player #982924 wins: \$10000

3 18 37 15 46 32

\$4 Winners: 27212

\$7 Winners: 4134

\$100 Winners: 119

\$10,000 Winners: 2

\$500,000 Winners: 1

\$1,000,000 Winners: 0