

Assignment 6

Static Methods & Array Basics

CEC – Computer Science

Instructor: M. Wolverton

Items Due

- **Source Code for Dice-Stats**

Instructions

Complete the coding directive in an IntelliJ IDEA project with the assignment name (e.g. Dice-Stats) and package name `ceccs`. Login to the file server at cec-code-lab.aps.edu and create a folder with the assignment name (e.g. Assignment 6). Locate the `fileName.java` (e.g. `Main.java`) files of your source code, then upload them to into the assignment folder. Code will be downloaded and archived for grading on the assignment due date.

Be careful to look at the specific requirements for each program!

Dice-Stats

Write a command line program that simulates statistics for rolls of six-sided dice pairs. The program should simulate a requested number of random dice rolls, then report back the total number of results for each value rolled (e.g. 2's rolled, 3's rolled ... 12's rolled).

Additional criteria:

- Create a new **static method** to handle a single die roll that has the following declaration:

```
static int rollDie() {  
    // logic to return a number 1 - 6 with equal probability  
}
```
- The program should ask the user how many trials to run (total rolls).
- Create and use an int **array** keep a total count for each outcome (2's rolled, 3's rolled ... 12's rolled).
- Print the total number of each roll.
- Print the calculated probability of each roll based on the simulated run.

Sample Output

```
-----  
----Six-Sided Dice Pair Roll Statistics----  
-----  
How many times to roll dice?  
1000  
Simulating Rolls..  
Here are the number of times each roll occurred:  
2: 28  
3: 56  
4: 110  
...  
12: 30  
Here are the probabilities for each roll during this trial:  
2: 2.8%  
3: 5.6%  
4: 11.0%  
...  
12: 3.0%
```

Optional Challenges

- Make the program ask for how many dice to roll. Be sure to account for all roll possibilities.
- Make the program ask how many sides each die has. Be sure to account for all roll possibilities.