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| LEARNING PROFILE FOR SnakeEyes | | | | | |
| *Name* | *:* | *Tyler Lucas* | *Submission Date* | *:* | *N/A* |
| *Student ID* | *:* | *3305203* | *Time Spent* | *:* | *10:50 am* |

# Problem Statement

How many times do you have to roll a pair of dice before they come up snake eyes? You could do the experiment by rolling the dice by hand. Write a computer program that simulates the experiment. The program should report the number of rolls that it makes before the dice come up snake eyes.

3.2 Study Activities for Section 3.3.1: Solve… using a while loop.

3.3 Study Activities for Section 3.3.2: Solve… using a do… while loop.

Theoretical probability is , meaning it should take an average of 36 rolls.

# Description of the Code

Simulates rolling a pair of dice. Stops if both dice roll a ‘1’ and outputs the number of rolls it took.

Implemented as directed, using either a while loop or a do… while loop, chosen in code by flipping the flags ENABLE\_WHILE and ENABLE\_DOWHILE (private static final boolean).

# Errors and Warnings

Version 1.0

No errors.

# Sample Input and Output

Example 1

Welcome to the magical dice roller game!

Let's try to get snake eyes with a pair of simulated dice...

Roll 1: 4, 2

Roll 2: 5, 5

Roll 3: 2, 4

Roll 4: 5, 1

Roll 5: 5, 4

Roll 6: 2, 5

Roll 7: 4, 6

Roll 8: 1, 4

Roll 9: 1, 4

Roll 10: 5, 4

Roll 11: 5, 1

Roll 12: 6, 2

Roll 13: 1, 4

Roll 14: 2, 4

Roll 15: 2, 5

Roll 16: 5, 1

Roll 17: 6, 3

Roll 18: 5, 5

Roll 19: 4, 6

Roll 20: 1, 1

It took 20 rolls to get snake eyes.

Example 2

Welcome to the magical dice roller game!

Let's try to get snake eyes...

Roll 1: 1, 1

It took 1 roll to get snake eyes.

Example 3

Welcome to the magical dice roller game!

Let's try to get snake eyes...

Roll 1: 1, 6

Roll 2: 5, 3

Roll 3: 3, 1

Roll 4: 2, 5

Roll 5: 4, 1

Roll 6: 2, 2

Roll 7: 4, 3

Roll 8: 4, 2

Roll 9: 6, 2

Roll 10: 3, 5

Roll 11: 3, 5

Roll 12: 5, 2

Roll 13: 2, 5

Roll 14: 2, 2

Roll 15: 3, 2

Roll 16: 6, 5

Roll 17: 2, 5

Roll 18: 3, 5

Roll 19: 2, 2

Roll 20: 5, 5

Roll 21: 2, 5

Roll 22: 2, 2

Roll 23: 3, 4

Roll 24: 2, 4

Roll 25: 5, 1

Roll 26: 2, 5

Roll 27: 1, 6

Roll 28: 3, 1

Roll 29: 4, 3

Roll 30: 5, 4

Roll 31: 4, 2

Roll 32: 2, 1

Roll 33: 6, 3

Roll 34: 1, 4

Roll 35: 4, 5

Roll 36: 5, 5

Roll 37: 5, 1

Roll 38: 5, 6

Roll 39: 5, 3

Roll 40: 2, 4

Roll 41: 4, 4

Roll 42: 1, 3

Roll 43: 5, 6

Roll 44: 5, 2

Roll 45: 3, 5

Roll 46: 5, 5

Roll 47: 2, 3

Roll 48: 5, 1

Roll 49: 5, 1

Roll 50: 6, 5

Roll 51: 6, 4

Roll 52: 5, 4

Roll 53: 5, 2

Roll 54: 4, 5

Roll 55: 5, 5

Roll 56: 1, 5

Roll 57: 5, 1

Roll 58: 2, 1

Roll 59: 3, 3

Roll 60: 3, 6

Roll 61: 1, 5

Roll 62: 4, 1

Roll 63: 4, 6

Roll 64: 5, 5

Roll 65: 1, 1

It took 65 rolls to get snake eyes.

# Discussion

I output the data to a text file to analyze its statistical properties with Excel, and found them to match what is expected for this case (see Figure 1). Having run the program 429 times, the maximum number of rolls was 224 (once), the minimum was 1 (11 times), the most frequent number of rolls was 3 (17 times), the mean was 23, the average was 33.97669, and the standard deviation was 34.46047.

Figure