

Homework #1: Yahtzee Rolling and Scoring

CPSC 224 - Software Development - Gonzaga University

THE PROBLEM:

Produce a Java implemented equivalent of the yahtzee1.cpp C++ program available both in your GitHub Classroom repo as well as here:

<https://github.com/worobec/Yahtzee>

Execution and output of your solutions should be roughly identical to the C++ version, an example of which is shown below. That doesn't mean that you should just copy the C++ code verbatim, even though that would work relatively well in Java. You should look at the desired game behaviors and consider an object-oriented approach to building up the same results as the example C++ code. Modeling parts of the game, such as Die, Hand of dice, Scorecards, etc should be strongly considered. Also be aware that your main() method should probably be no longer than 10 lines of code, which is in sharp contrast to the example code given.

The classes you produce to complete this assignment will potentially be used in subsequent individual assignments and will be part of the toolkit you bring to your team for our group project.

This assignment is intended to have you work through most of the java basics found in our textbook. One hint: The way you store a hand might be more flexible down the road if you investigate and use a generic `ArrayList`¹. This is not required, but may save you some rework later.

SUBMISSION:

When formatting and turning in your assignment be sure to follow: [Dr. Sprint's Coding Standards](#) which include the use of javadoc throughout your code. With each subsequent assignment, the documentation strictness and coding standards will increase.

Your code should be submitted via GitHub Classroom. Your assignment repository should also contain a .pdf document describing the major design and development considerations encountered in implementing your assignment. The document should be named "Homework 1 Summary.pdf" and saved in the Summaries directory within the project repo. This document should be written in a narrative style and should include:

- A summary of the goal or purpose of the program in your own words.
- An overview of the general design you chose for your program.
- A UML Class Diagram that includes all classes that are part of your solution. Diagrams must be produced by a software tool and not hand drawn. I use MS Office Visio, dia, or app.diagrams.net for this.
- A description of any major design and/or programming issues, why these were the major issues, how you addressed them, and why you addressed them the way you did.
- A retrospective of what you would have done differently if you had more time.

IMPORTANT:

This is an individual assignment. Everything you turn in should be the result of keystrokes done by you. You should not consult nor use any existing classes related to Yahtzee or dice. You should not share your code nor look at the code of your classmates. It is ok to have generalized discussions about java and to have high-level design discussions about the classes, attributes, and methods necessary for the solution.

Grading:

10% summary document, 10% coding standards, 80% code functionality

```
C:\Users\Bruce\Desktop\Yahtzee\yahtzee1.exe
Your roll was: 2 5 4 5 1
enter dice to keep (y or n) nynyn
Your roll was: 6 5 2 5 3
enter dice to keep (y or n) nynyn
Your roll was: 5 5 2 5 6
Here is your sorted hand : 2 5 5 5 6
Score 0 on the 1 line
Score 2 on the 2 line
Score 0 on the 3 line
Score 0 on the 4 line
Score 15 on the 5 line
Score 6 on the 6 line
Score 23 on the 3 of a Kind line
Score 0 on the 4 of a Kind line
Score 0 on the Full House line
Score 0 on the Small Straight line
Score 0 on the Large Straight line
Score 0 on the Yahtzee line
Score 23 on the Chance line

Enter 'y' to play again
```

¹ https://www.w3schools.com/java/java_arraylist.asp