

CS 1400 Lab #19: Designing a Dice Game

Objectives:

The objective of this lab is to help you understand how to write code that validates input, and uses loops together with branches and random numbers.

Study Material

1. [Do it again?](#)
2. [Using loops to validate input](#)
3. [Showing loops in Pseudo-code](#)
4. [Random numbers](#)

The problem

For this assignment, you will be designing a console program that simulates rolling a pair of dice. Your program will perform the following steps:

1. Create a Random Number generator object.
2. Ask the user if they want to roll the dice
3. Get the user's response and validate that it is either 'y' or 'n'. If it is not a 'y' or an 'n', tell the user that the input is invalid and ask for another response.
4. If the user responds with a 'y' then
 - a. Generate two random numbers in the range 1 - 6
 - b. If the two numbers are 6 and 6, display the message "You rolled boxcars"
 - c. If the two numbers are 1 and 1 display the message "You rolled snake-eyes"
 - d. In all other cases display the message "You rolled ..." and show the values of the two random numbers
 - e. Return to step 2 and ask the user again if they want to roll the dice.
5. If the user responds with a 'n', print a goodbye message and quit.

Deriving the Solution

This program is an application of the things that you have studied in this lab. To begin, Fill out the Algorithm Design Worksheet. Draw an

Activity Diagram that describes the steps outlined above and write the pseudo-code for this program as you have learned to do in previous labs.

Writing the Pseudo-Code

Start Visual Studio and create a new console project. Call it lab19. Copy the line-by line description of your program from the Algorithm Design Worksheet to your new project. Mark each line of pseudo-code as a comment. Your pseudo-code must be complete and describe the loops and decisions required to make your program work.

File(s) to Submit:

Place your complete project folder in zip file and name the zip file lab_19_your-initials_V1.o.zip. For example, I would name my file lab_19_RKD_V1.o.zip. Submit this assignment as Lab #19 on Canvas. Please do not include any other files in your submission.

Grading Guidelines

Description	Points possible
Assignment meets grading guidelines: <ul style="list-style-type: none">o Source code files contain a declaration that you did not copy any code, except that provided.o Assignment has been properly submitted to Canvaso Code meets style guidelineso Code contains a Console.ReadLine() statement at the end	2
Your pseudo-code describes the steps required to write the dice playing program.	3
Total	5