

APM11A1 - Advanced Programming

22th February 2023
Course Lecturer: Sandile Thamie Mhlanga



Code Challenge 1: Dice Game

Instructions

Apply the concepts learned to solve the below problem

This Code Challenge submission is required. Zero marks will be awarded for non-submission.

- **IMPORTANT:** Please name your Visual Studio Solution like so (failure to do so will attract a **1%** penalty):
 - [STUDENT_NO]_[SURNAME]_CC1
 - (e.g. 222833200_Mhlanga_CC1)
- **PLAGIARISM:** Please refer to your Learning Guide as well as the latest University of Johannesburg's plagiarism policy document entitled: "POLICY: PLAGIARISM"

COPYING: This is an individual assignment; if any copying is detected, all parties involved will score a **0%** for the assignment and **WILL** face disciplinary consequences

Question 1

DICE GAME

Do the necessary planning and write an algorithm in pseudo code for the following:

Random
values for
three dices
Display the
random
values

Sort the values of the dices in ascending order (Arrays are not to be implemented) Display the sorted dices

Ask the user to enter the number of times he/she wants to do analysis.

Using a loop random three new dice values, use the new values and determine if there is a double pair of values or 'n triple thrown

Also determine if the three values thrown are all even digits or all odd digits.

If the three new values match the sorted values then stop the loop.

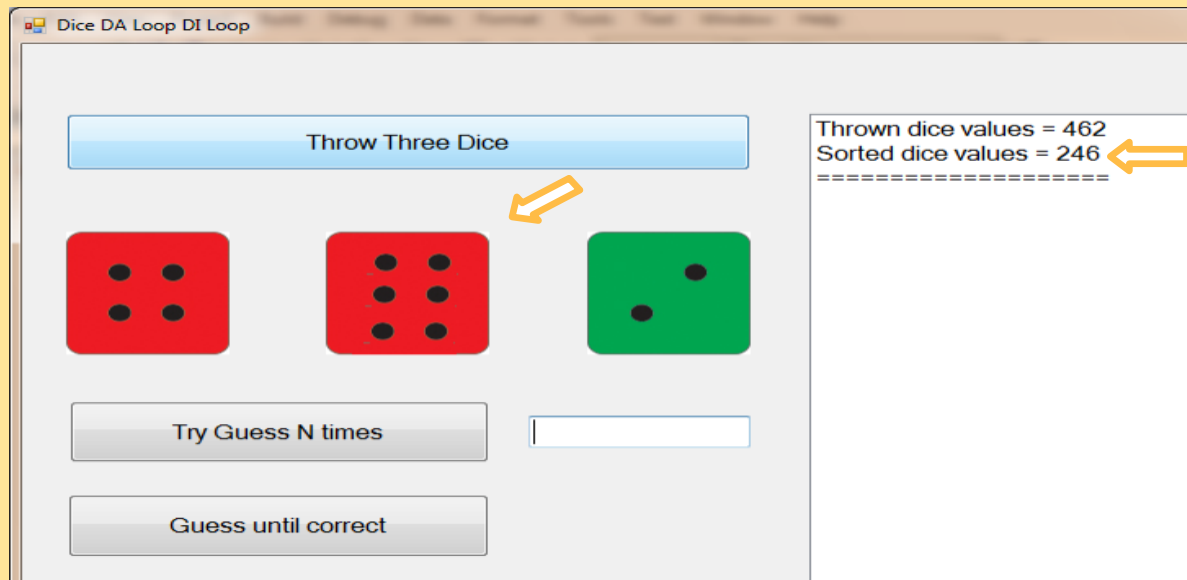
If there is no match in the N number of times specified by the user, then the user should be allowed to activate a process using a loop that will count how many times it would take to guess the three values correctly.

The number of times it took to guess the three values correctly should be displayed.

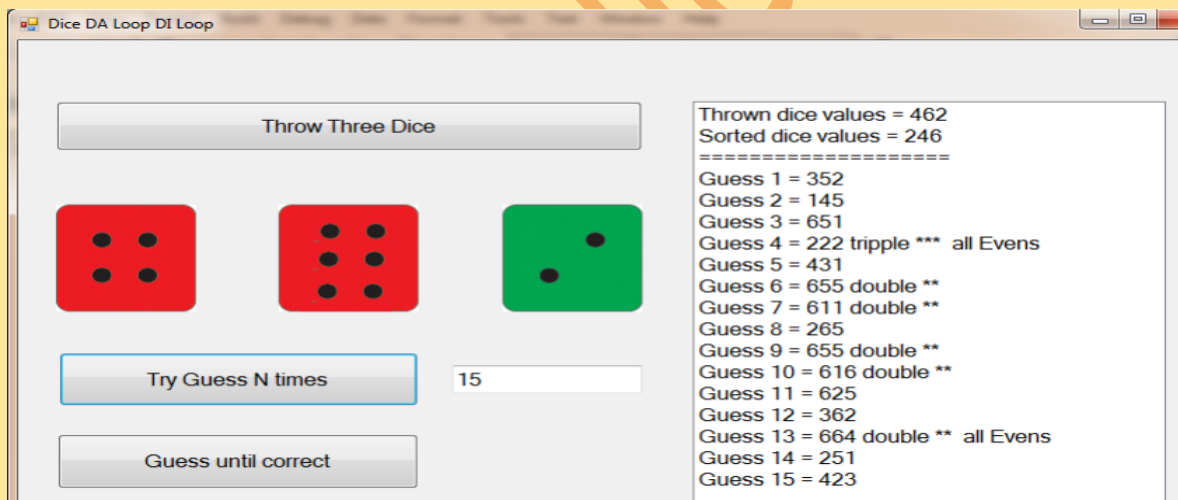
Design the following user interface

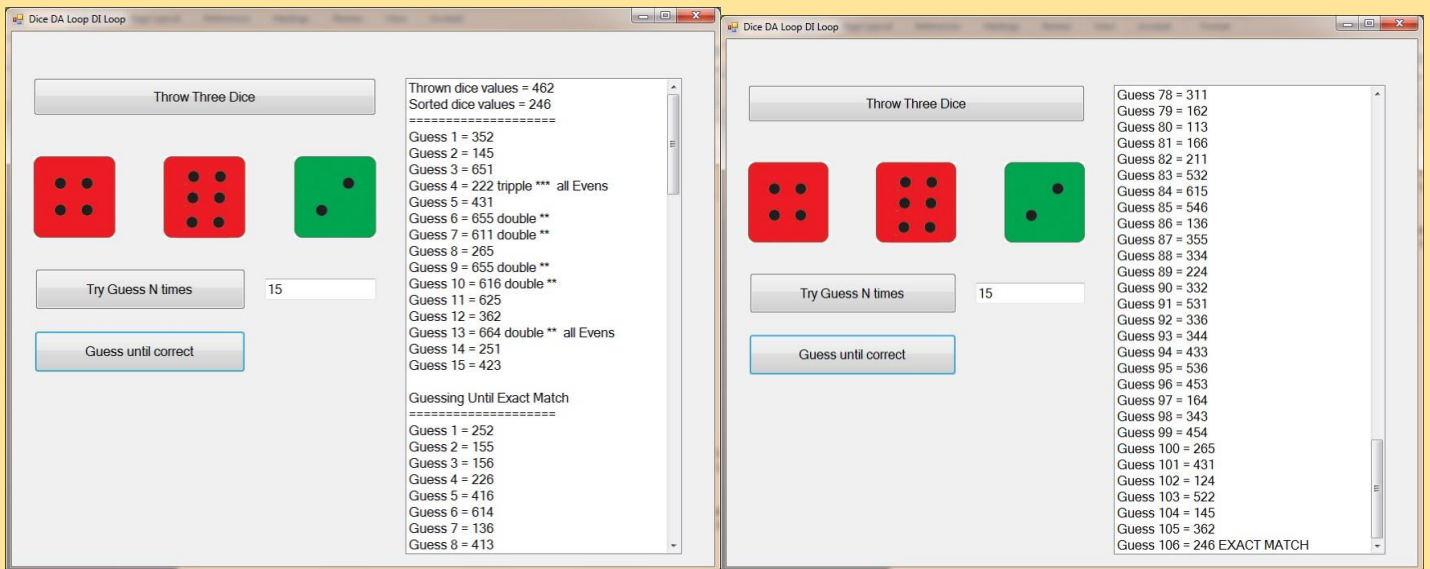
The user interface is titled "Dice DA Loop DI Loop". It features a "Throw Three Dice" button at the top left. Below this button are three dashed rectangular boxes for displaying dice images. To the right of these boxes is a large text area labeled "lstResults". Below the dice boxes are two buttons: "Try Guess N times" and "Guess until correct". To the right of the "Try Guess N times" button is a text input field labeled "txtTimes".

When the user clicks on the [Throw Three Dice] button three random dice values should be generated and corresponding images displayed in the pictureboxes



The three initial values are listed in the listbox, where after the three values are sorted.





The number of times analysis (guesses and analysis) should be done is entered in the textbox. Note the output, which states whether the values thrown are triples of doubles of all evens or all odds.

When the user Clicks on the [Guess until correct] button then the computer must generate values until the values guessed are the same as the initial values that have been sorted.

NB: This Lab Ex must be submitted by 23:59, Tuesday 31st of March 2023