100 Dice Rolls: Counts the total number of times each spot (button) on a game board was landed on

PublicClassForm1

PrivateSubbtn100DiceRolls\_Click**(**ByValsenderAsSystem**.**Object**,** ByValeAsSystem**.**EventArgs**)** Handlesbtn100DiceRolls**.**Click

ConstNUM\_ROLLSAsInteger **=** 100

DimbtnItems**()** AsButton **= {**Me**.**btn0**,** Me**.**btn1**,** Me**.**btn2**, \_**

Me**.**btn3**,** Me**.**btn4**,** Me**.**btn5**,** Me**.**btn6**,** Me**.**btn7**,** Me**.**btn8**, \_**

Me**.**btn9**,** Me**.**btn10**,** Me**.**btn11**,** Me**.**btn12**,** Me**.**btn13**,** Me**.**btn14**, \_**

Me**.**btn15**}**

DimboardSquares**(**btnItems**.**Length**)** AsInteger'the board spots

CallCountTrials**(**NUM\_ROLLS**,** boardSquares**,** btnItems**)**

CallDisplayCounts**(**boardSquares**,** btnItems**)**

EndSub

'Counts the total number of times each spot (button) on a game board was landed on

'beginning from the Start location and moving around the board clockwise. Each move

'is determined by rolling a pair of dice and the count is maintained in the array

'boardSquares(). The application simulates 100 dice rolls.

'

'post: boardSquares() stores the total number of times each corresponding spot

'on a game board was landed on based on dice rolls simulated 100 times moving around

'the board clockwise from the Start location.

'

SubCountTrials**(**ByValnumRollsAsInteger**,** ByRefboardSquares**()** AsInteger**,** ByRefbtnItems**()** AsButton**)**

DimrollOne**,** rollTwo**,** rollOutcomeAsInteger

Dimoffset**,** currentLocationAsInteger

currentLocation **=** 0

ForrollAsInteger **=** 0To **(**numRolls **-** 1**)**

rollOne **=** RndInt**(**1**,** 6**)**

rollTwo **=** RndInt**(**1**,** 6**)**

rollOutcome **=** rollOne **+** rollTwo

'Account for the last spot before landing on Start again

If **((**rollOutcome **+** currentLocation**) > (**btnItems**.**Length **-** 1**))** Then

offset **=** rollOutcome **+** currentLocation **-** btnItems**.**Length

Else

offset **=** rollOutcome **+** currentLocation

EndIf

'Count the number of times this spot has been landed on

boardSquares**(**offset**) +=** 1

currentLocation **=** offset

Nextroll

EndSub

'Displays the total number of times each spot (button) on the Game Board was landed

'on based on 100 dice rolls.

'

'post: The element values in the boardSquares array, which stores the total

'number of times each spot was landed on, has been displayed on the corresponding button

'on the form.

'

SubDisplayCounts**(**ByRefboardSquares**()** AsInteger**,** ByRefbtnItems**()** AsButton**)**

ForitemAsInteger **=** 0TobtnItems**.**Length **-** 1

btnItems**(**item**).**Text **=** boardSquares**(**item**)**

Nextitem

EndSub

'Calculates a random number between lowNum and highNum.

'

'post: a number between lowNum and highNum has been returned.

'

FunctionRndInt**(**ByVallowNumAsInteger**,** ByValhighNumAsInteger**)** AsInteger

Randomize**()**

ReturnInt**((**highNum **-** lowNum **+** 1**) \*** Rnd**() +** lowNum**)**

EndFunction

PrivateSubForm1\_Load**(**ByValsenderAsSystem**.**Object**,** ByValeAsSystem**.**EventArgs**)** HandlesMyBase**.**Load

EndSub

PrivateSubbtn14\_Click**(**ByValsenderAsSystem**.**Object**,** ByValeAsSystem**.**EventArgs**)** Handlesbtn14**.**Click

EndSub

EndClass