

Game Programming

The Four Games – Question Set 01

Dice Roller

1. A student's code has the line `money=100` placed as the first line of `cmdRoll_Click()` instead of `cmdStartGame_Click()`. Will this affect the game? Explain.
2. Assume the player currently has 50 dollars. They have pressed the roll button and they received a pair of 4's. How much money will be displayed on the screen?
3. The programmer wants to give 30 dollars for a pair of 1,2,3,4,5's, but 50 dollars for a pair of 6's. How would you make this change without erasing any code that is already there?
4. How would you implement recording the number of rolls that the user has made since the program starts?

Button Masher

1. What does it mean to *declare a variable*? Give an example from the game.
2. The variables for the game are declared at the top of the program. Why didn't the student declare the `score` variable inside of the `cmdPress_Click` method instead?
3. A student wants the program to keep track of TWO high scores. They add a second variable called `bestscore2` (the second highest best score) and replaces the current high score code with the following code. Does it work? Explain.

```
If score > bestscore Then
    bestscore = score: txtBestScore = bestscore
    bestscore2 = bestscore: txtBestScore2 = bestscore2
End If
If score > bestscore2 Then
    bestscore2 = score: txtBestScore2 = bestscore2
End If
```

4. You want to move the hit button to a new horizontal location (between 1000 and 9000) each time it is pressed. Describe the code you would add. (*hint: .top or .left position objects*)

Guess Game

1. A student changes the checking code inside of `cmdGuess_Click()` to read

```
If Val(txtGuess)>mystery Then
    txtResult = "Too Low!"
Elseif Val(txtGuess)<mystery Then
    txtResult = "Too High!"
Else
    txtResult = "Got It!"
End If
```

Will this code work as intended? Explain.

Would there be any 'good coding' suggestions that you would offer the student?

2. A student wants to change the game so that a player can enter the maximum value of the mystery number to increase difficulty. For example: if the user types 500 then the random number will be from 1-500. How would you implement this?

Horse Race

1. What is the role of the *userpick* variable?

A student places the following code inside of the `Timer1_Timer()` method:

```
Dim r as Integer
r = Int(rnd*300) + 50
position1 = position1 + r : Image1.Left = position1
position2 = position2 + r : Image2.Left = position2
position3 = position3 + r : Image3.Left = position3
```

Why do you think the student `+50` to the random number rather than use `r=Int(rnd*300)` ?

Does this segment of code work as intended? Explain.

2. Consider the `cmdReset_Click()` method. Instead of using the lines `position1 = 120` and `Image1.left = position1`, a student only uses the line `Image1.left = 120`. What affect will this have on the program? Explain.

3. A student coded their `checkForWin()` method to read as follows:
(assume that `Win` and `Lose` have been coded properly)

```
If position1 > 7500 Or position2 > 7500 Or position3 > 7500 Then
    Timer1.Enabled = False
    cmdReset.Enabled = True
End If
```

```
If position3 > 7500 and userpick = 3 Then
    Call Win()
ElseIf position2 > 7500 and userpick = 2 Then
    Call Win()
ElseIf position1 > 7500 and userpick = 1 Then
    Call Win()
Else
    Call Lose()
End If
```

Do you think it will work as intended for all outcomes of the race? Explain.

4. Pretend the game is running and that horse 1, horse 2, and horse 3 are close together and all cross the line at the same time (but slightly different positions, ex. 7503, 7505, 7501). Who will win the race according to the original program code?
5. How would you change the original code so that it will tell you the correct winner even when two or more horses cross the finish line at the same time?
(the horse with the largest distance should win!)