

Answers- Unit 5 Lesson 6

Section 2-

What information does the user input? The number of times the user wants the coin flipped.

How does the app process that information? The app calculates how many times heads or tails appear.

What is being repeated? Where is there an opportunity to use a loop? The coin flips and a check for heads or tails.

What information does the app output? The number of total heads and the number of total tails

Section 3-

- The program starts to run a little slower at 10,000 flips or more
- Line 11-20
- Line 11
- This is short hand for `tails = tails + 1`. It's a simple way to add one.

Section 4-

Find four different for loops in the program. What do they each do?

- **Loop 1 (lines 7-9):** sets the text in the five text boxes to text as it's typed in the input box
- **Loop 2 (lines 12-14):** sets the font size of the text in the text boxes to the value on the slider
- **Loop 3 (lines 18-20):** sets the text color of the text in the text boxes to the color in the dropdown

- **Loop 4 (lines 28-30):** sets the text in the text boxes to a random phrase
- All of these loops run 5 times, each time setting one of five boxes with information.

Take a look at the names of the screen elements in Design Mode. Then navigate back to the code. How is "text" + i used? How does it evaluate with each round of the loop?

- This is a way of doing something to a set of elements. In this case, we have five text boxes named "text0", "text1", "text2", "text3", and "text4"
 - "text" + i is evaluated each round of the loop.
 - First round: "text0"
 - Second round: "text1"
 - Third round: "text2"
 - Fourth round: "text3"
 - Fifth round: "text4"
- So when the first round of the loop is executed, the element with the "text0" ID is changed to whatever information is in the for loop.

What happens if you change the text box variable names? Try changing them from text0, text1, etc. to textbox0, textbox1, etc. What do you need to change in the code for the program to still work?

- In order for the code to now work, every time we see the id "text" in the code it needs to be changed to "textbox".
 - For example, in line 8, the new code should be:
 - `setProperty("textbox" + i, "text", "getText("textInput"));`
- **Note:** be careful! Line 8 students may be tempted to change the dropdown field "text" to "textbox". However, this is where we are selecting the *property* not the ID. In this case, "text" refers to changing the actual content of the text, not the ID.

What happens if you change the Boolean expression $i < 5$ in the for loops? Change all the Boolean expressions to each of these options and discuss:

- In this case, setting all of the loops to $i < 4$ means they will only run four times. Only four of the text boxes will get content.

- Now setting all the loops to $i < 3$ means they will only run three times. Only three of the text boxes will get content.
- Setting the loops to $i \leq 4$ means the the loop will actually run five times. All the text boxes will get content.