Name(s)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | **Activity Guide - Functions Make** |  |



**Step 1 - Try the app**

* Try many of the different options.
* Pay attention to what is happening on the screen when you move the slider or choose an item from the dropdown.
* When does the screen update?
* What happens if you choose lavender and Lucinda Sans from the dropdowns? Try choosing lightreen and moving the slider until you receive feedback.

Discuss with a Partner

* What does this app do?
* What are the inputs?
* What are the outputs?
* How could a function be used in this app?

**Step 2 - Plan**

**Variables:** Fill in the table below for each variable you'll need to create.

|  |  |
| --- | --- |
| **Variable Name** | **What the Variable Stores** |
| *num* | The option that the user selects. |
|  |  |
|  |  |

**Conditionals:** An if-else-if statement is used to check if certain options have been selected. Set up the conditional below using the variables you created above.

* Note: You can be creative here! Choose your own combinations and feedback messages.

|  |
| --- |
| if (color == \_\_\_\_\_”blue”\_\_\_\_\_\_\_\_\_\_ && fontFamily == \_\_\_\_\_\_\_\_”Times”\_\_\_\_\_\_ ){  setText("feedbackOutput", \_\_\_\_\_\_\_\_”blue times”\_\_\_\_\_\_);  } else if ( \_\_\_\_\_\_\_\_color\_\_\_\_\_\_\_ == \_\_\_\_\_”green”\_\_\_\_\_\_\_\_\_\_ && \_\_\_\_\_\_\_\_fontFamily\_\_\_\_\_\_\_ == \_\_\_\_\_\_\_\_”Times”\_\_\_\_\_\_\_ ){  setText("feedbackOutput", \_\_\_\_\_\_\_\_\_\_”green times”\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_);  } else {  setText("feedbackOutput", \_\_\_\_\_\_\_\_\_\_\_\_\_”sad times”\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_);  } |

**Functions:** Consider what should be included in a function that updates the screen. Write out your plan below.

Things to think about:

* What elements on the screen need to be updated using the variables above?
* Does the conditional above belong in the function? Why or why not?
* When will the function be called?

|  |  |
| --- | --- |
| The count needs to be updated.  No, there is there no need for the conditional above to be in the updateScreen() function, nothing would benefit from it.  The function will get called when ever a button is clicked (upButton or downButton). | Review the **updateScreen() Pattern** to help you plan your function. |

**Inputs:** What are the inputs for the app? These will all be turned into onEvents.

|  |  |  |
| --- | --- | --- |
| **Input** | **Action** | **Result** |
| *"quoteInput"* | *input* | *The text on the screen appears, one character at a time as it's typed.* |
| *"fontFamilyInput"* | *change* | *The text on the screen will have a change in font.* |
| “colorInput” | change | The color of the background behind the text will get changed to a new color. |
| “fontSizeInput” | change | The text of the screen will either increase or decrease in size. |

**Step 3 - Write Your Code**

* Write the code for the app, using your plan above and the comments provided in Code Studio to help
* Step You Can Follow
  + Create all the variables from your table above.
  + Give your variables a starting value using the assignment operator (=)
  + Create a conditional that checks if various options are selected.
  + Create a function that updates the screen.
  + Create event handlers (onEvent) for the inputs in your table above
  + Use your debugging skills to identify unexpected behavior and fix your program
  + Comment your code as you go, explaining what each event handler and function does
* Extension Ideas
  + Create a dropdown with image names and decorate your quote!

**Step 4 - Submit**

Before your submit check the rubric below to make sure your program

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category** | **Extensive Evidence**  **100-90 Grade Range** | **Convincing Evidence**  **90-80 Grade Range** | **Limited Evidence**  **80-70 Grade Range** | **No Evidence**  **70 & Below** |
| Input | onEvents are created for all the required inputs.  **EX: 3 onEvents is the minimum for receiving an A in this category. So the student would receive only a 90 for meeting only the minimum requirement.**  **90-95: 3 links depending upon quality (ex: scholarly resource)**  **95-100: 5+ links depending upon quality (ex: scholarly resource)** | onEvents are created for most of the inputs.  **EX: 2 onEvents is the minimum for receiving an A in this category. So the student would receive only a 90 for meeting only the minimum requirement.** | onEvents are created for some of the inputs.  **EX: 1 onEvents is the minimum for receiving an A in this category. So the student would receive only a 90 for meeting only the minimum requirement.** | onEvents are not created for any inputs.  **EX: Student would receive a failing grade.** |
| Storage: Variables | Variables are created and appropriately used for all pieces of information used in the app. | Most information is stored in a variable and appropriately updated throughout the app. | Some information is stored in a variable and appropriately updated throughout the app. | There are no variables which store the necessary information for the app to work correctly. |
| Code: Conditionals | An if-else-if statement is used which correctly checks if certain options have been selected and displays feedback. | An if-else-if statement is used that partially checks if certain options have been selected and displays feedback. | An if-else statement or an if statement is used that checks if one option has been selected. | No conditional is present. |
| Code: Functions | A function is used which correctly updates all output elements. The function is called in all onEvents. | A function is used which correctly updates most of the output elements. The function is called in all onEvents. | A function is used which updates some of the output elements or the function is only called in some onEvents. | There is no function which updates the screen. |
| Code runs without errors. | No errors are present in the required code. | One or two errors are present in the required code. | Three or four errors are present in the required code. | More than four errors are present in the required code. |
| Coding Comments | Comments are used to correctly explain the purpose and function of all onEvents and functions. | Comments are used to explain the purpose and function of most onEvents and functions. | Comments are used to explain the purpose and function of some onEvents and functions. | Comments are not present. |