Northern Michigan University (Marquette Co, MI)

Time: 110 minutes.

1. Write code for the Swift method CountDogs. It accepts a string variable as a parameter that may contain one or more instance of the string "DOG". The method returns the number of times "DOG" (all caps) appears in this string. For example if the input string were "HOW MUCH IS THAT DOGGY IN THE WINDOW? I DO HOPE THAT DOG IS FOR SALE!", the method should return 2. (Do not use a "magic method" for this; use a loop.)

2. Write code for the Swift method Alternator. It takes a two-dimensional array of integer and returns an integer representing the "alternating sum". It's the sum of all values in even rows MINUS the sum of all the values in odd rows. For example,

1	2	3	4	Sum: 10
5	6	7	8	Sum: 26
9	10	11	12	Sum: 42
13	14	15	16	Sum: 58

Answer is: 10 - 26 + 42 - 58 = -32

3. Write the methods in ViewController that displays a button reading "Shrink". There should also be a text field, and you can assume that the text field isn't empty. Clicking this button should remove the last character from the text in the text field. For example, if the text field contained the text "LUCKY", clicking the "Shrink" button would change the text to "LUCK". The button, the button's action, and the text field should all be created in code. Nothing should be created in the storyboard at all.

4. I have a variable var value:[[String]]. Write the following methods for displaying the contents of this array in a TableView. value[section#][row#] contains the text at any specific row The title for each section is "Section #" where # is an integer. 1 for the first section. 2 for the second, etc.

```
func numberOfSections(in tableView: UITableView) -> Int
```

```
func tableView(_ tableView: UITableView, numberOfRowsInSection section:
Int) -> Int
```

```
func tableView(_ tableView: UITableView, cellForRowAt indexPath:
IndexPath) -> UITableViewCell
```

```
func tableView(_ tableView: UITableView, titleForHeaderInSection section:
Int) -> String?
```

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CS344-01-23F: iOS / iPhone Programming (Andrew A. Poe)   Name: _____
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5. Write Swift code that uses an sqlite database with a table called Dogs containing fields Name and Breed. Your code should delete all cocker spaniels AND all Fido's.

6. https://www.youtube.com/results?search_query=whatever is the web link for YouTube.

In Swift, write code for a TabBarController. The First View Controller contains a textfield and a button; the second contains a web kit view. Write the viewDidLoad method for this view controller, assuming the textfield and button are properly connected in the storyboard.

The user will type in a search request into the text field on the first view controller, and submit by clicking the button. (You may assume the button is connected to an appropriate action in the storyboard. You have to write the action method, though.)

The second view should switch automatically to become the active view showing the results of the youtube query. That is, unless the search request is the word "surprise" in which case the query should be "Never+Gonna+Give+You+Up". (You do not have to write the viewDidLoad for the second view controller.)