Homework #1: Beginning iOS Development with Swift
Due: Jan. 25, 2018

Preliminary

- Create a free Apple developer account using your `@nmsu.edu` email address.
- Accept Prof. De Leon's electronic invitation to be added to the EE443/E593 development team. Among other management practices, we will provision devices through this team.
- Create a free, student GitHub account if you do not already have one.

Notes

- In order to see the result of `print` you must have the console open.
- If Xcode complains about the "import UIKit" line in your playground, go to the file inspector and set the platform to "iOS."
- As you work through code examples, you may have to comment out previous statements in order to run subsequent statements.

Recommended Reading

Some background on Swift

https://en.wikipedia.org/wiki/Swift_(programming_language)

Week 2 Lectures

Prof. DeLeon (Swift review Chapters 21 and 24)

Assignment

1. Read Chapter1 1 Introduction
2. Read Chapter 21 Swift Review
3. Read Chapter 24 Objects vs. Classes (Sections Classes and Inheritance)
4. Submit a hardcopy of p. 2 - 4 of this assignment

You are highly encouraged to experiment with the example code in Chapters 21 and 24 using a Swift Playground.

Name:

Please answer the following questions pertaining to the Swift programming language.

1. True or False: you must initialize a variable when you declare it.
2. Explain Swift's *type inferencing*.

3. Give an example of how a programmer would *explicitly* declare a variable's type.

4. True or False: like many other programming languages, you must end the statement with a semicolon.
5. Explain the difference between the declarations `var` and `let`.

6. For `Int`, `.max` and `.min` are called *properties* and return what values?

7. True or False: for the statement `let a = 1.23`, Swift will infer a 32-bit `Float` type.
8. Why doesn't the last line compile?

```
let a = 123
let b = 0.456
let c = a + b
```

9. What does the ampersand "&" do for the following arithmetic operations: &+, &-?

10. What is the result of `c` for the following?

```
let a = 7
let b = 3
let c = a ^ b
```

11. How would you assign a constant, `smileyFace` to the smiley face emoticon (unicode 263A)?

12. True or False: The third line results in a compile error.

```
var s1 = "Hello"
let s2 = "world"
var s3 = s1 + s2
```

13. True or False: The third line results in a compile error.

```
var s1 = "Hello"
let s2 = "world"
var s3 = length(s1 + s2)
```

14. True or False: The third line results in a compile error.

```
var a = true
var b = false
var c = a + b
```

15. What are the two collection types? How do they differ?

16. True or False: The result of the third line is `integers = [4 4 3]`.

```
var integers = [1, 2, 3]
integers[1..<3] = 4
```

17. True or False: The result of the third line is `integers = [1 4 4]`.

```
var integers = [1, 2, 3]
integers[1..<3] = 4
```

18. What does the array `integers` look like after these statements?

```
var integers = [1, 2, 3]
integers[0...2] = [5, 4]
```

19. What is `integers[2]` after these statements?

```
var integers = [1, 2, 3]
var integersCopy = integers
integersCopy[2] = 4
```

20. What is an *optional*?

21. What does it mean to unwrap an optional?

22. What is the difference between `var color:String?` and `var color:String`

23. Does a dictionary order its key-value pairs? If so, what is the print order for the statements:

```
let d = [ 0: "Red", 1: "Green", 2: "Blue"]
for (key, value) in d {
    print("\(key) -> \(value)")
}
```

24. True or False: With Swift, as with most programming languages, in a `switch` statement, control passes from one case into another which means if several cases are true, the case will be executed.

25. True or False: The `switch` expression could be a string.