Week 6 Assignment

(Estimated Time To Complete: 2 - 5 hrs)

1. **Iteration ( for loops, while loops)**
   1. Write a for loop to print out numbers 1 to 10.
   2. Write a while loop that starts with a variable x = 0 and keeps adding 1 to x until x is greater than 5. Print the value of x after each iteration.
2. **Conditional Statements (if, nested if, match/case)**
   1. Write a loop to print out the even numbers from 1 to 20 using an if statement
   2. Fizz Buzz problem from week 4 except incorporate at least one nested if statement. Test number 15 and print "FizzBuzz".
   3. 3
3. **Advanced conditionals (any, all, in, not in)**
   1. Write a function that takes a list of booleans and returns True if any are True
   2. Write a function that takes a list of boolean and returns True if all are True
   3. Write a function that takes a list of strings and returns True if the list contains the string ‘apples’
   4. Write a function that takes a list of strings and returns True if the list does not contain the string ‘apples’
4. **Advanced For Loops** 
   1. Define a variable total = 0. Write a for loop that iterates through the list values = [1, 2, 3, 4], adding each value to the total variable. Print the total after the loop completes.
   2. Write a for loop that directly accesses and prints each element from the list colors = ['red', 'blue', 'green', 'yellow'] without using the range() function.
   3. Initialize an empty list new\_list = []. Use a for loop to append the squares of numbers from 1 to 5 to new\_list. Print new\_list after the loop finishes
   4. Given a 2D list matrix = [[1, 2, 3], [4, 5, 6], [7, 8, 9]], write a for loop that prints each element in the matrix. Print each row on a new line.
      1. Hint: use a nested for-loop