**Class 3** – ChE310\_Sec1\_F2019 9.3.2019

<http://www.reuelgroup.org/numerical-methods-che-310.html>

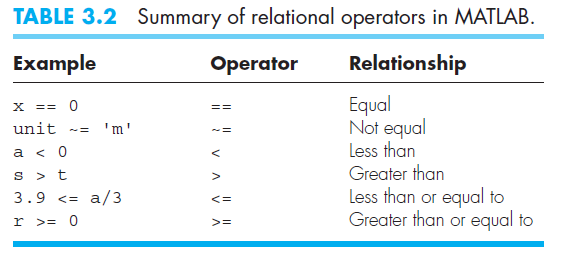
**Group Activity:** With your group do the following and submit to Adam on Slack for credit by 2:25pm.

Create a script, ‘DiceGame.m’ that does the following:

1. Contains appropriate header information
2. Uses **input** to ask user for a guess of the sum total value of two dice thrown at random (6 sided) and store as a variable.
3. Uses random number generator to simulate the values of two thrown dice
4. Sums the values of these dice
5. Prints the sum value to the screen
6. *Challenge* – how can you check to see if the guess matches? Print to the screen ‘Correct Guess’ or ‘Incorrect Guess!’

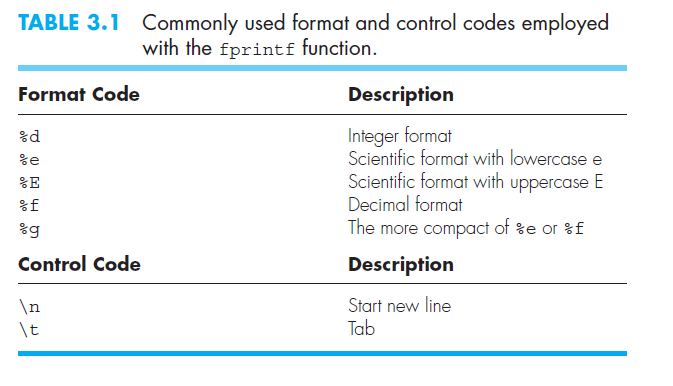
**Outline for Class 3 Lecture**

1. Conditions and logical indexing



* 1. **if**…**elseif**…**else…end**
  2. **&&** vs. **||**

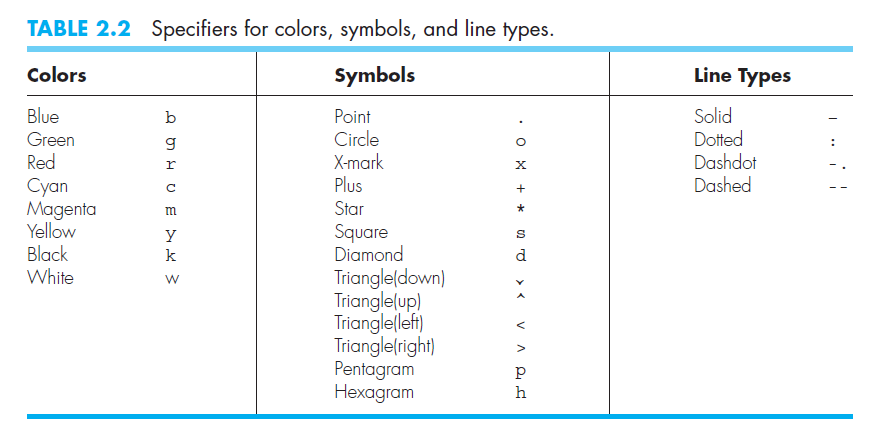
1. Catching other errors
   1. **try**, **catch**, **end** loops
   2. **warning** [‘display’, but in orange!]
2. Use of **disp**
3. Use of **fprintf**

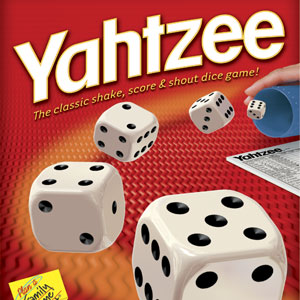


[See pg. 54 of text for good examples]

%.4f [example of common notation, # is digits present in decimal.

1. Exporting data
   1. **csvwrite**
   2. **dlmwrite**
   3. **xlswrite** (phasing this one out)
   4. **writematrix** (NEW 2019a version)
   5. **writecell** (NEW 2019a version)
2. Loops and Logic in Matlab
   1. **for**…**end** [if you know number of steps]
   2. **while**…**end** [loop until condition met]
   3. **break / continue / return**
   4. Preallocation of memory
   5. Infinite loops, break with **ctrl+c**
   6. **pause**
   7. **tic**…**toc**
3. Show how to comment out sections of code with **%{** and **%}**
4. BREIF intro to Plotting
   1. **plot**
   2. **semilogx**, **semilogy**, **loglog**



1. **End of class coding time**

Create an M-file that simulates the game of Yahtzee – rolling 5 dice, trying to get all of the numbers the same.

How many times do you need to roll before you get to a Yahtzee?

If you obtained 100 Yahtzee’s, what is the **average** number of rolls it takes? How does this compare with your understanding of probability?

**Random**

Degree symbol can be cut and paste in or use the [unicode](https://en.wikipedia.org/wiki/Unicode) number like this **char**(176)