COSC150: Laboratory 1 (4 February 2020)

Introduction to Programming Concepts: Getting Started with Excel as a Modeling Tool

Basic Ideas:

1. Variable names
2. Assignment
3. Iteration
4. Recursion
5. Controls
6. Visualization
7. Conditions and Branching

One method of learning is to learn each skill, practice it, then apply it. Examples?

Use a "sandbox" approach, where you can learn specific skills without "fear" of harm.

Using Excel as a computational "sandbox". Developer mode.

Simple Pet Model
1. Variable names
2. Assignment
3. Control

Solving by Iteration
1. Variables
2. Assignment
3. Iteration
4. Recursion

Simple Time model Functions of time, counting
1. Variable names
2. Assignment
3. Iteration
4. Control
5. Recursion
6. Conditions and Branching

Diffusion Model
1. Averaging Neighbors:
    a. Define absolutely correctly for one cell
    b. "Spread" the definition to all cells in one column
    c. "Spread" the column definition to many columns
2. Variable names, Assignment, Iteration, Control, Recursion, Conditions and Branching
3. Visualization