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TEXAS ADVANCED COMPUTING CENTER
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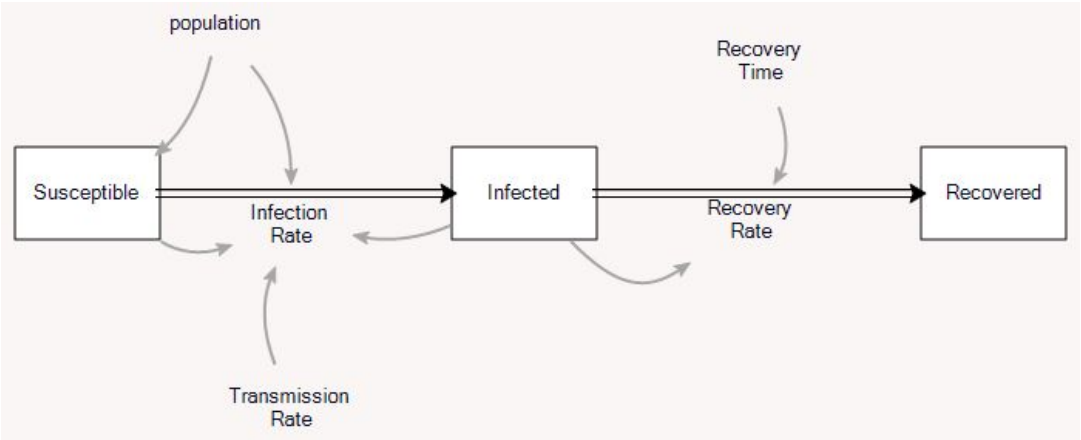
TEXAS
The University of Texas at Austin

MS-CC Day 1

Let's do this!

PRESENTED BY:

The SIR Model



Task 1 - Code Joe

Variables to hold data

Mathematical Operations to do math :)

Conditionals to make decisions

Loops to repeat our process

Functions/Subroutines to reuse code

Objects or Classes to define our "things"

Let's meet Joe.

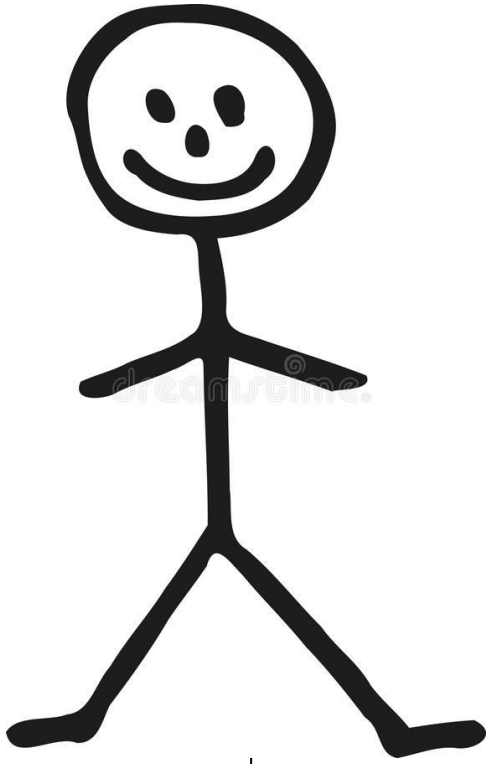
Joe might get sick.

Joe will be sick for 5 days.

After 5 days, Joe gets better.

Once Joe gets better, Joe can no longer get sick.

Let's "code" Joe.

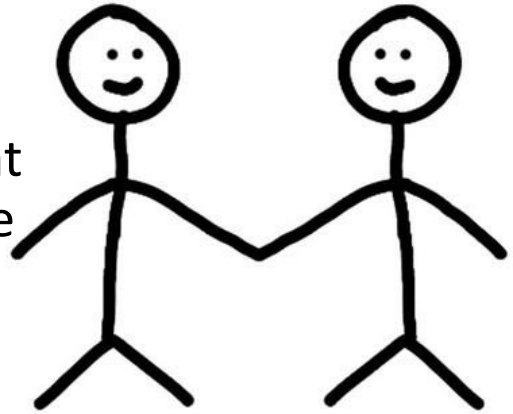


Task 2 Code Joe and Jane

We met Joe.

Joe has a friend, Jane

If Joe gets sick, Jane might get sick.



Modify your code, so when Joe gets sick that triggers Jane to roll a random number to see if Jane gets sick.

Loop through your code until both Joe and Jane get sick and they each get better.

Object Oriented Python

What's an Object?

Object-oriented programming is a programming paradigm that provides a means of structuring programs so that properties and behaviors are bundled into individual objects.

Hackathon Attendees and Je'amime (and me): "HUH?!"

Object Oriented Python

What's an Object? - Let's try this again

Object-oriented programming allows you to code up "things" that have ***properties/attributes*** (variables) and ***behaviors/methods*** (functions)

These "things" allow us to create reusable code and allows us mimic real "things"

Hackathon Attendees and Je'amime (and me): "AHHH!"

Object Oriented Python

How do we go about doing this?

Classes

A class is a blueprint for how something should be defined.

Object Oriented Python

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Classes

A class is a blueprint for how something should be defined.

Let's design our ***Person*** **Class**

Object Oriented Python

We need another concept.

the *instance?*

The class is the blueprint, an ***instance*** is an object that is built from a class and contains real data.

The **class** would be a form, the **instance** is the form filled out.

Object Oriented Python

We need a couple bits of syntax.

the *self*

The ***self*** parameter is a reference to the current *instance* of the class, and is used to access variables that belongs to the class.

Object Oriented Python

We need a couple bits of syntax.

the __*init*__

When you create a new object of a class, Python automatically calls the __init__() method to initialize the object's attributes.

the __init__() method has two underscores on each side.

this indicates that Python will use the method internally.

Since Python will automatically call the __init__() method immediately after creating a new object, you can use the __init__() method to initialize the object’s attributes.

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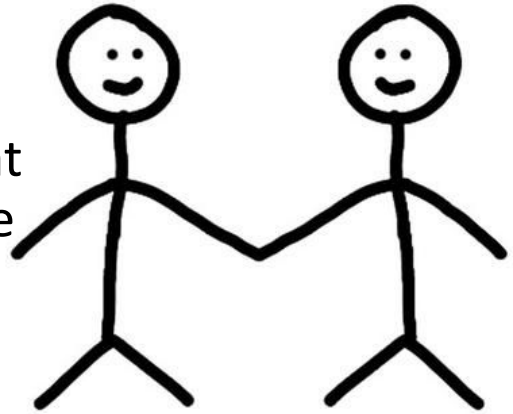

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