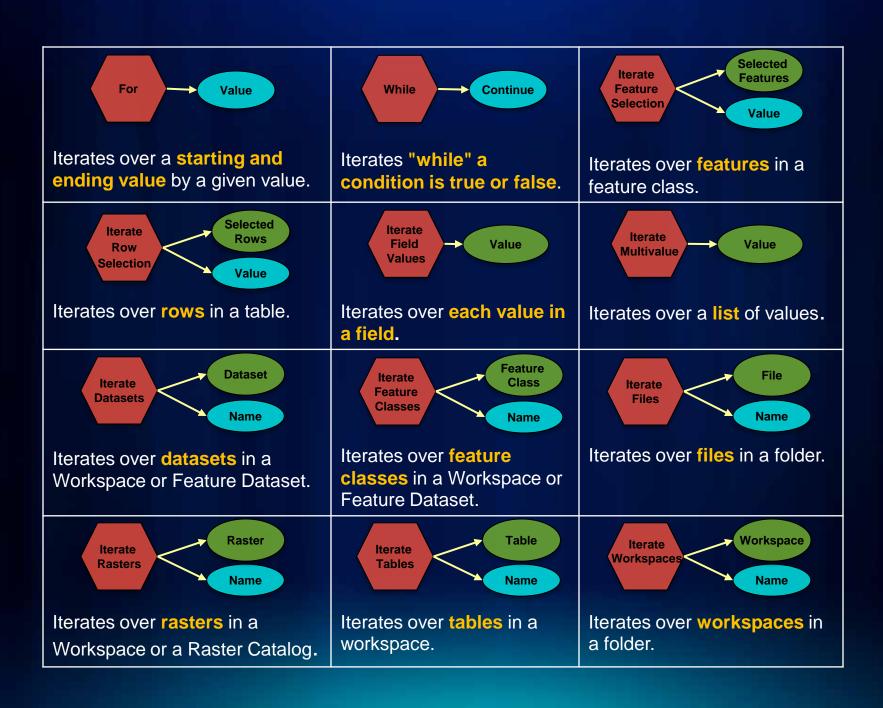# What is iteration?

Iteration = **looping** = **repeat a process over and over**

Iteration in ModelBuilder = **Run entire model** or a **single tool or process repeatedly**

Tools to iterate in ModelBuilder = **Iterators**

Iterator

For → Value

Iterates over a **starting and ending value** by a given value.

While → Continue

Iterates **"while" a condition is true or false**.

Iterate Feature Selection → Selected Features, Value

Iterates over **features** in a feature class.

Iterate Row Selection → Selected Rows, Value

Iterates over **rows** in a table.

Iterate Field Values → Value

Iterates over **each value in a field**.

Iterate Multivalue → Value

Iterates over a **list** of values.

Iterate Datasets → Dataset, Name

Iterates over **datasets** in a Workspace or Feature Dataset.

Iterate Feature Classes → Feature Class, Name

Iterates over **feature classes** in a Workspace or Feature Dataset.

Iterate Files → File, Name

Iterates over **files** in a folder.

Iterate Rasters → Raster, Name

Iterates over **rasters** in a Workspace or a Raster Catalog.

Iterate Tables → Table, Name

Iterates over **tables** in a workspace.

Iterate Workspaces → Workspace, Name

Iterates over **workspaces** in a folder.

Where to get help? Click ➡ [Doc](), [Tutorials](), [Book]()
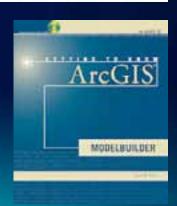

Desktop 10

- Geoprocessing
  - What is geoprocessing?
  - A quick tour of geoprocessing
  - Essential geoprocessing vocabulary
  - Geoprocessing tools
  - The geoprocessing framework
  - Commonly used tools
  - Finding tools
  - Executing tools
  - Managing tools and toolboxes
  - Creating tools
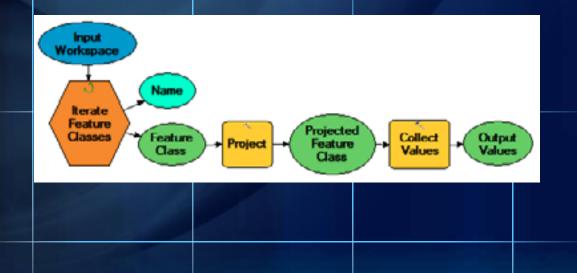 - Sharing tools
  - Geoprocessing with ModelBuilder
    - What is ModelBuilder?
    - A quick tour of ModelBuilder
    - Essential ModelBuilder vocabulary
    - Tutorials
    - ModelBuilder basics
    - Using ModelBuilder to execute tools
    - Using ModelBuilder to create model tools
    - Advanced Techniques in ModelBuilder
      - A quick tour of advanced techniques in ModelBuilder
      - Using in-line variable substitution
      - Using Lists
      - Using Iterators for iteration - (Looping)
        - A quick tour of using iterators for iteration—(Looping)
        - Which iterator to use for what task?
        - Example of using an iterator in a model
        - Accessing iterators in ModelBuilder
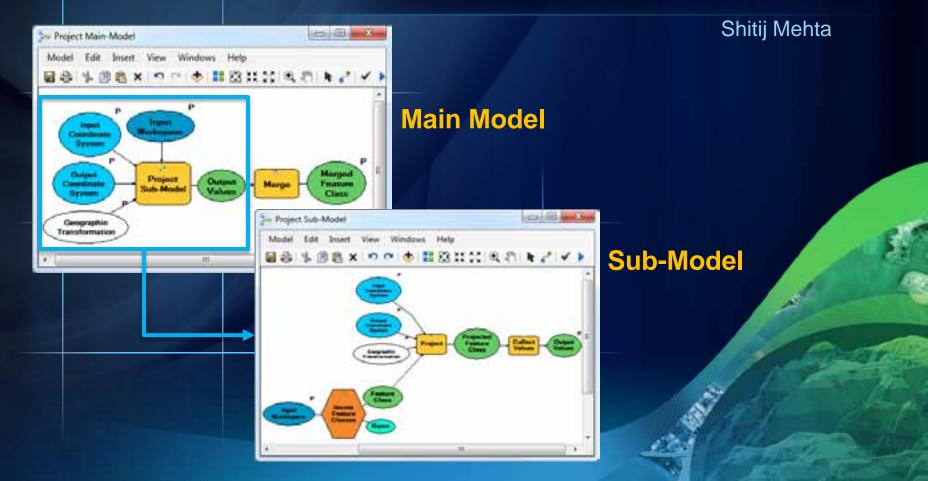
Tutorial 1– Iterate Feature Classes

ArcGIS

MODELBUILDER

Demo 1 – Iterating Feature Classes

Shitij Mehta

Demo 3 – Model within a Model
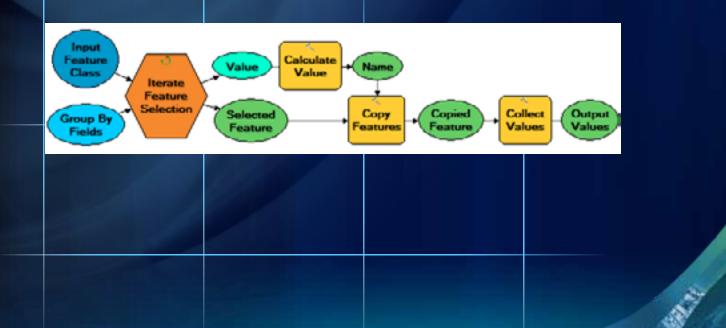
Shitij Mehta

Main Model

Sub-Model

Rules for a using iterators

- **Only one iterator** can be used **per model**.

- Add only the tools you want to run as many times as an iterator in the same model.

- The output of any tool connected to the iterator can have (if required) a unique name for each iteration to avoid being overwritten by

  - Using the system variable **%n%**

    C:\Sctatch\scratch.gdb\output_%n%

  - Using the **Name or Value output of the iterator**

    C:\Sctatch\scratch.gdb\output_%Name%
    C:\Sctatch\scratch.gdb\output_%Value%

  - Using **any other variable** in the model as an inline variable

    C:\Scratch\scratch.gdb\output_%XYZ%

Demo 3 – Iterating Feature Selection

Shitij Mehta

Questions?

Thank You!!!!

Please fill out the online evaluation form.
www.esri.com/sessionevals