Carnegie Mellon University
Computer Science Academy

CS1: Unit 4 Review

More Conditionals(if-elif-else Statements)

if-elif-else Statements

- After we use if, we can use elif to add another test that will only be tested if the first test was False
  - Note that elif is actually short for else if
- There can be many elif's following an if, but at most one of their bodies will run
- Use elif without else, but you cannot use elif without if
- Code in an else body runs if all the tests before it were False
- else can be thought of in English as "otherwise"

Key Events

onKeyPress and onKeyRelease

- onKeyPress is called when a key is pressed
- The parameter to onKeyPress is key
- Use the key parameter to test which key was pressed using if and elif statements
- Use onKeyRelease to run code when the user releases a key
- The arrow keys are represented as: “left”, “right”, “up” and “down”

Methods

Custom Properties

- Can add your own *custom properties* to any shape
  - Ex. For a circle c, can initialize c.count = 0, and then can use that count throughout
- Must be named something not used by CMU Graphics already
- Can also have *custom app properties* that do not belong to a shape

Shape Methods

- toFront() brings a shape to the front of other shapes
- toBack() pushes a shape to the back of other shapes
- Methods are basically the same as functions, with these two differences:
  - Methods are called differently: We use shape.toFront() instead of toFront(shape)
  - Methods are like properties in that they can differ across shapes
  - Every shape has the toFront() and toBack() methods
- addPoint(x, y) is only available for *polygons*
  - Takes the (x, y) values of some point on the canvas, and adds that point to the polygon
- contains(x, y) takes two values, x and y, and simply tells us whether or not the shape contains the point (x, y)
  - returns True or False
- shape.hits(x,y) is only True if (x,y) is not only inside the border, but the shape is drawn at that point
  - If the fill=None for the shape, any point inside the shape will return False

- shape1.hitsShape(shape2) tests if a shape hits another shape
- shape1.containsShape(shape2) tests if the first shape fully contains the second shape
- app.stop() is called when we want no more events happen