CompSci 94
Writing your own Functions
March 5, 2019

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Q1. Function vs Procedure

• What is the difference between a function and a procedure?
Q1. Function vs Procedure

- What is the difference between a function and a procedure?
  - Procedure is something to do – turn, move, dance
  - Function is a calculated value – a number, an object, a direction
  - A function by itself is not very useful, a function has to be used in some way based on the type of value it calculates
Q2. Write a function called tallerHeight to compute the height of the tallest of two objects.

- What type of function should it be? Where do you create it?

- What is the return type?

- Need two parameters, what are their types?
Q2. Write a function called tallerHeight to compute the height of the tallest of two objects

• What type of function should it be? Where do you create it?
  – Scene function
    • Like to be able to use it for any two objects

• What is the return type?
  – DecimalNumber

• Need two parameters, what are their types?
  – SJointedModel
    • Then works for any creatures
Can write your own functions

Function for Scene   OR   Function for character

Use scene function if it involves multiple objects
Create Scene function tallerHeight

- Inputs: two objects
- Output: the height (decimal number) of the taller object
Parameters - SJointedModel

Filtering
- Assignable From
  - myScene
  - ground
  - camera
- Contains
  - eagle
  - flamingo
  - bear
  - panda

Selection
- SThing
  - SScene
    - Scene
  - STurnable
    - SMovableTurnable
    - SModel
  - SJointedModel
    - SFlyer
      - Flyer
        - Eagle
        - Flamingo
      - SQuadruped
        - Quadruped
        - Bear
      - SBiped
        - Biped
        - Panda
    - SCamera
    - SGround

Available Procedures, Functions, and Properties

class SJointedModel
  procedures
  - straightenOutJoints
  - say
  - think

class SModel (inherit)
  procedures
  - setVehicle
  - setPaint
  - setOpacity
  - setWidth
  - setHeight
  - setDepth
  - resize
  - resizeWidth
  - resizeHeight
  - resizeDepth
  functions
  - getPaint
  - getOpacity
  - getWidth
  - getHeight
Q3 What line of code do we have to put in every function?
Q3 What line of code do we have to put in every function?

• Return statement!
  – Must return the same type as the specified return value.
Q4 What is the code for tallerHeight?
Q4 What is the code for tallerHeight?
Q4 What is the code for `tallerHeight`?
Q5 Given a bear and a flamingo, how does one use the function tallerHeight?

• Have panda say what the taller height is.
Q5 Given a bear and a flamingo, how does one use the function tallerHeight?

- Have panda say what the taller height is.
Q6. Write a function called tallerObject to return the object who is taller of two objects.

• What type of function should it be? Where do you create it?

• What is the return type?

• Need two parameters, what are their types?
Q6. Write a function called tallerObject to return the object who is taller of two objects.

• What type of function should it be? Where do you create it?
  – Scene function
    • Like to be able to use it for any two objects

• What is the return type?
  – SJointedModel

• Need two parameters, what are their types?
  – SJointedModel
    • Then works for any creatures
Q7 What is the code for tallerObject?
Q7 What is the code for tallerObject?
Q7 What is the code for tallerObject?

declare SJointedModel function tallerObject
with parameters: SJointedModel creature1, SJointedModel creature2

do in order
if creature1 getHeight > creature2 getHeight is true then
  return creature1
else
  return creature2
Q8 How do you get the taller of the bear and flamingo to say they are taller?
Q8 How do you get the taller of the bear and flamingo to say they are taller?
Announcements

• RQ and videos for Thursday
• Next assignment out this week
Class Today

• Jumping cat calculating how high and how far to jump, and other things…