

CompSci 94 Exam 3 Fall 2024 Reference sheets!!!

Math

this.pig

move

FORWARD

1.0

add detail

amount:

1.0 (current value)

0.0

0.25

0.5

1.0

2.0

10.0

Random

Whole to Decimal Number

Math

Custom DecimalNumber...

1.0 + ???

1.0 - ???

1.0 \* ???

1.0 / ???

??? + ???

??? - ???

??? \* ???

??? / ???

min, max

absolute value, round, ceiling, floor

sqrt, pow

sin, cos, tan, asin, acos, atan, atan2, PI

exp, log, E

DO NOT WRITE ON THE REFERENCE SHEETS!

Given below are the condition possibilities for an if statement

The main 'if' block shows the following options for the condition:

- true** (current value)
- true**
- false**
- nextRandomBoolean
- NOT **true**
- NOT ???
- BOTH **true** AND ???
- EITHER **true** OR ???
- BOTH ??? AND ???
- EITHER ??? OR ???
- Relational (DecimalNumber) { ==, !=, <, <=, >=, > }
- Relational (WholeNumber) { ==, !=, <, <=, >=, > }
- Relational (SThing) { ==, != }
- Relational (MoveDirection) { ==, != }
- Relational (TurnDirection) { ==, != }
- Relational (RollDirection) { ==, != }
- Relational (Key) { ==, != }
- Relational (Color) { ==, != }
- Relational (Paint) { ==, != }
- TextString Comparison

Three separate boxes to the right show additional condition options:

- Boolean conditions:**
  - ??? < ???
  - ??? ≤ ???
  - ??? > ???
  - ??? ≥ ???
  - ??? == ???
  - ??? ≠ ???
- Relational (DecimalNumber) conditions:**
  - ??? == ???
  - ??? ≠ ???
- Text/String conditions:**
  - ??? contentEquals ???
  - ??? equalsIgnoreCase ???
  - ??? startsWith ???
  - ??? endsWith ???
  - ??? contains ???

Below are the tiles at the bottom of a **procedure**

The tiles at the bottom of a procedure block are:


- do in order
- count \_
- while \_
- for each in \_
- if \_
- do together
- each in \_ together
- variable...
- assign
- //comment

Below are the tiles at the bottom of a **function**

The tiles at the bottom of a function block are:

- do in order
- count \_
- while \_
- for each in \_
- if \_
- do together
- each in \_ together
- variable...
- assign
- //comment
- return \_




Given below are the panda procedures and panda Properties on the bottom right.

 **this.panda**

**Procedures** **Functions**

group by category ▼

**Panda** 's Editable Procedures (3)

-  **this.panda** standingPose
-  **this.panda** sleepingPose
-  **this.panda** crawlingPose

**Biped** 's Editable Procedures (0)

say, think

- this.panda** say text: ???
- this.panda** think text: ???

position

- this.panda** move direction: ???, amount: ???
- this.panda** moveToward target: ???, amount: ???
- this.panda** moveAwayFrom target: ???, amount: ???
- this.panda** moveTo target: ???
- this.panda** place spatialRelation: ???, target: ???

orientation

- this.panda** turn direction: ???, amount: ???
- this.panda** roll direction: ???, amount: ???
- this.panda** turnToFace target: ???
- this.panda** orientTo target: ???
- this.panda** orientToUpright
- this.panda** pointAt target: ???

position & orientation

- this.panda** moveAndOrientTo target: ???

**size**

- this.panda** setWidth width: ???
- this.panda** setHeight height: ???
- this.panda** setDepth depth: ???
- this.panda** resize factor: ???
- this.panda** resizeWidth factor: ???
- this.panda** resizeHeight factor: ???
- this.panda** resizeDepth factor: ???

**appearance**

- this.panda** setPaint paint: ???
- this.panda** setOpacity opacity: ???

**vehicle**

- this.panda** setVehicle vehicle: ???

**audio**

- this.panda** playAudio audioSource: ???

**timing**

- this.panda** delay duration: ???

**other**

- this.panda** straightenOutJoints

 **this.panda**

one shots ▼

**this.panda's Properties**

**Panda** panda ← new Panda

**Paint** =

**Opacity** =

**Vehicle** =


**Position** = ( x: -1.00, y: 1.73, z: -0.10 )

**Size** =

**Show Joints:** ☐

**Reset**





Given below are the panda functions.

 **this.panda**

**Procedures** **Functions**


group by category ▼

Panda's Editable Functions (3)



-   getLeftEar
-   getRightEar
-   creatureAbove friend1: ???, friend2: ???

Biped's Editable Functions (0)




appearance

-  getPaint
-  getOpacity


















size

-  getWidth
-  getHeight
-  getDepth

prompt user

-  getBooleanFromUser message: ???
-  getStringFromUser message: ???
-  getDoubleFromUser message: ???
-  getIntegerFromUser message: ???

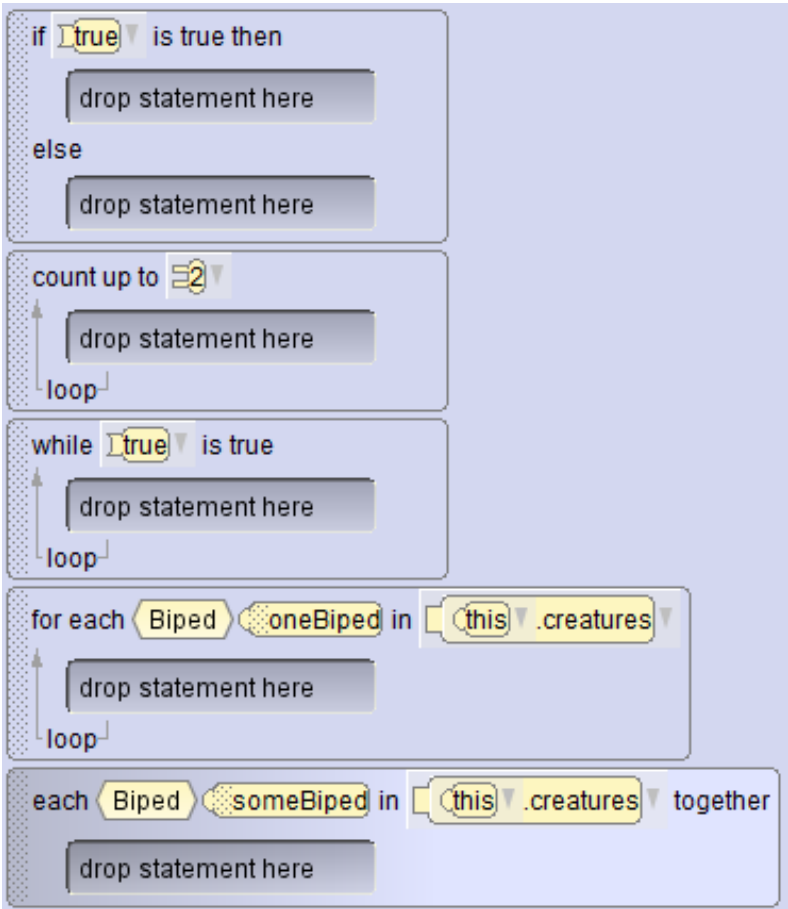
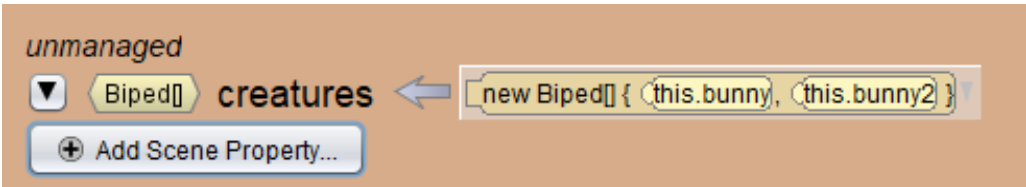
other

-  getDistanceAbove other: ???
-  getDistanceBehind other: ???
-  getDistanceBelow other: ???
-  getDistanceInFrontOf other: ???
-  getDistanceTo other: ???
-  getDistanceToTheLeftOf other: ???
-  getDistanceToTheRightOf other: ???
-  getVantagePoint entity: ???
-  getVehicle
-  isAbove other: ???
-  isBehind other: ???
-  isBelow other: ???
-  isCollidingWith other: ???
-  isFacing other: ???
-  isInFrontOf other: ???
-  isToTheLeftOf other: ???
-  isToTheRightOf other: ???
-  toString

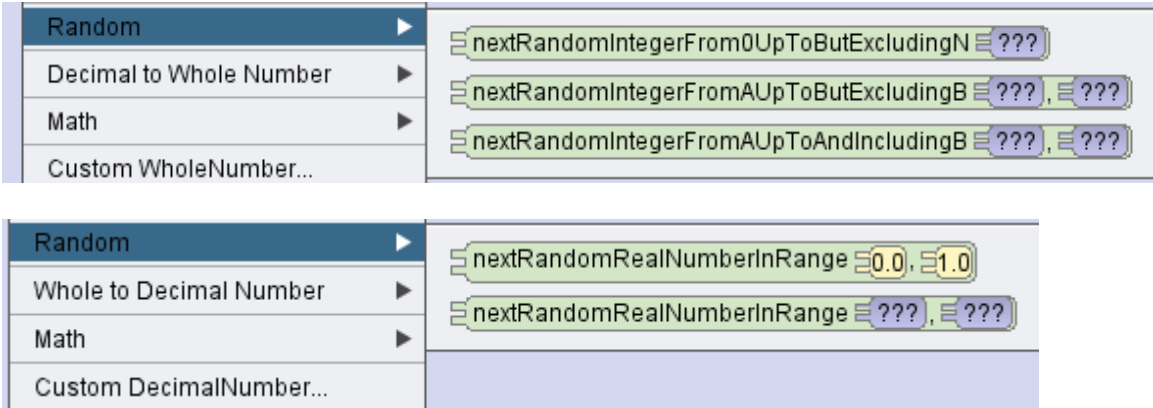
joints

-  getHead
-  getLeftAnkle
-  getLeftClavicle
-  getLeftElbow
-  getLeftEye
-  getLeftEyelid
-  getLeftFoot
-  getLeftHand
-  getLeftHip
-  getLeftIndexFinger
-  getLeftIndexFingerKnuckle
-  getLeftKnee
-  getLeftMiddleFinger
-  getLeftMiddleFingerKnuckle
-  getLeftPinkyFinger
-  getLeftPinkyFingerKnuckle
-  getLeftShoulder
-  getLeftThumb
-  getLeftThumbKnuckle
-  getLeftWrist
-  getMouth
-  getNeck
-  getPelvis
-  getRightAnkle
-  getRightClavicle
-  getRightElbow
-  getRightEye
-  getRightEyelid
-  getRightFoot
-  getRightHand
-  getRightHip
-  getRightIndexFinger
-  getRightIndexFingerKnuckle
-  getRightKnee
-  getRightMiddleFinger
-  getRightMiddleFingerKnuckle
-  getRightPinkyFinger
-  getRightPinkyFingerKnuckle
-  getRightShoulder
-  getRightThumb
-  getRightThumbKnuckle
-  getRightWrist
-  getSpineBase
-  getSpineMiddle
-  getSpineUpper

If, loops, and creating an array element.



Random Integer and Decimal Numbers



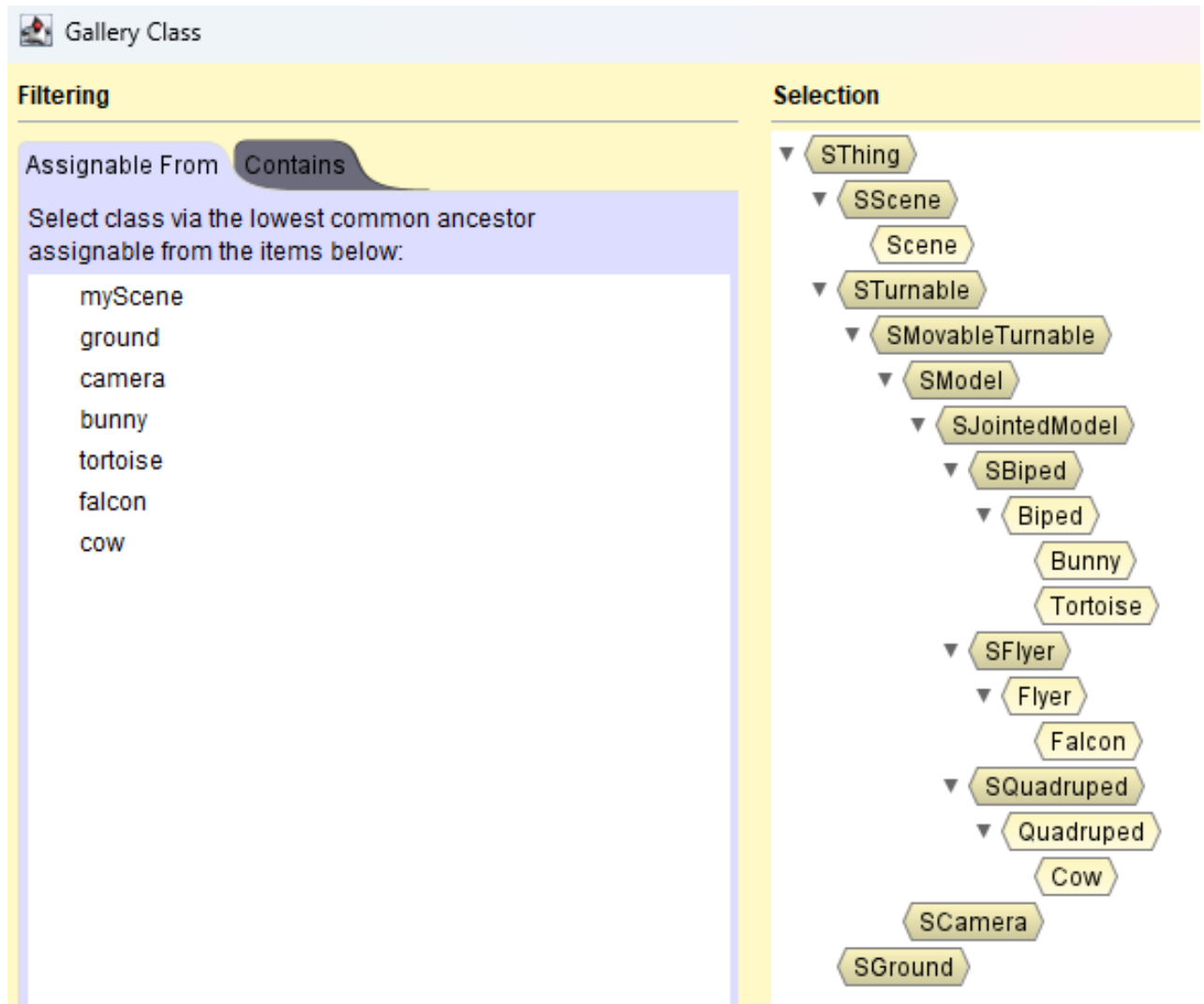
## Events



The image displays five Scratch code blocks for handling various events. Each block begins with a 'this' button and a specific event listener. The first block, 'addSceneActivationListener', contains a 'sceneActivated' procedure with a 'do in order' loop containing 'myFirstMethod'. The second block, 'addTimeListener', is set to fire every 1.0 seconds and contains a 'timeElapsed' procedure with a 'do in order' loop containing a 'drop statement here' box. The third block, 'addKeyPressListener', contains a 'keyPressed' procedure with a 'do in order' loop containing an 'if' statement that checks if the key is 'S' and then branches into 'then' and 'else' paths, each with a 'drop statement here' box. The fourth block, 'addMouseClickedOnObjectListener', is set to fire when a mouse click occurs on a new Visual object containing 'this.bunny', 'this.panda', 'this.panda2', and 'this.panda3'. It contains a 'mouseClicked' procedure with a 'do in order' loop containing an 'if' statement that checks if the model at the mouse location is 'this.panda' and then branches into 'then' and 'else' paths, each with a 'drop statement here' box. The fifth block, 'addCollisionStartListener', is set to fire when a new SThing object is created containing 'this.bunny', 'this.panda', 'this.panda2', and 'this.panda3'. It contains a 'collisionStarted' procedure with a 'do in order' loop containing a 'drop statement here' box. The final block is 'addDefaultModelManipulation'.

```
this addSceneActivationListener  
  
declare procedure sceneActivated  
do in order  
  this myFirstMethod  
  
this addTimeListener 1.0 add detail  
  
declare procedure timeElapsed event getTimeSinceLastFire  
do in order  
  drop statement here  
  
this addKeyPressListener add detail  
  
declare procedure keyPressed event isLetter event isDigit event getKey event isKey key:  
do in order  
  if event isKey S is true then  
    drop statement here  
  else  
    drop statement here  
  
this addMouseClickedOnObjectListener, setOfVisuals new Visual[] { this.bunny, this.panda, this.panda2, this.panda3 } add detail  
  
declare procedure mouseClicked event getScreenDistanceFromLeft event getScreenDistanceFromBottom event getModelAt  
do in order  
  if event getModelAtMouseLocation == this.panda is true then  
    drop statement here  
  else  
    drop statement here  
  
this addCollisionStartListener new SThing[] { this.bunny }, new SThing[] { this.panda, this.panda2, this.panda3 } add detail  
  
declare procedure collisionStarted event getSThingFromSetA event getSThingFromSetB  
do in order  
  drop statement here  
  
this addDefaultModelManipulation
```

## Sample of the Gallery Class



**DO NOT WRITE ANYTHING ON THE ALICE  
REFERENCE SHEETS.**

**TURN IN ALL PAGES INCLUDING THE ALICE  
REFERENCE SHEETS!**