

KEYWORDS AND OPERATORS

Pink: represents a physical tile colored pink (any of the pink tiles)

Yellow: represents a physical tile colored yellow (any of the yellow tiles)

L1: represents one of the physical markers in the kit (a specific colored game piece)

L2: represents one of the physical markers in the kit (the other game piece)

UP: the direction to move the marker (increasing the row)

DOWN: the direction to move the marker (decreasing the row)

LEFT: the direction to move the marker (increasing the column)

RIGHT: the direction to move the marker (decreasing the column)

if: part of a conditional statement that tests a boolean condition (one time check of condition)

while: part of a conditional statement that tests a boolean condition (possible multiple checks)

else: part of an if-statement that marks the block of code for when the condition is false

true: boolean value

false: boolean value

and: joins 2 boolean conditions to check that both are true

or: joins 2 boolean conditions to check that either are true

not: operator applied to a boolean condition that changes false to true, and true to false

in: part of a conditional statement used to check membership in a list

(): used to signify a function is being called (i.e. an action is being performed)

(): also used to show precedence among operators

[]: used to construct a list of values

Arithmetic operators: + - * / %

Relational operators: < > <= >= == in

FUNCTIONS / OPERATIONS

tile.place(x,y) - example: Pink.place(1,5)

marker.place(x,y) - example: L1.place(2,12)

tile.place(marker) - example: Pink.place(L1)

marker.shift(direction,units) - example: L1.shift(UP,1)

roll() - physically roll the die to get a random number

random() - physically grab a tile (without looking) to get a random tile color

print(value) - displays the value (for our purposes, written on a piece of paper). example: print(x)

if (condition)

code statement 1

code statement 2

else

code statement 1

while (condition)

code statement 1

code statement 2

code statement 3

if (condition 1) and (condition 2)

code statement 1

CSC165 Programming Unplugged Set-Up (Initial Presentation of the language)

OBJECTS	<ul style="list-style-type: none"> . Visualization Grid . 20 Tiles (10 pink, 10 yellow) . 2 Markers (L1 and L2) . 1 Die . 5 Variable Index Cards (x,y,v1,v2,i)
KEYWORDS AND OPERATORS	<ul style="list-style-type: none"> - Represent physical tiles: <i>Pink, Yellow</i> - Represent physical markers: <i>L1, L2</i> - Shift directions: <i>UP, DOWN, RIGHT, LEFT</i> - Arithmetic operators: <i>+ - * / =</i> - Relational operators: <i>< > ==</i> - Conditional programming constructs: <i>if, else, while</i>
FUNCTIONS / OPERATIONS	<ul style="list-style-type: none"> - tile.place(x,y) - example: Pink.place(1,5) - marker.place(x,y) - example: L1.place(2,12) - tile.place(marker) - example: Pink.place(L1) - marker.shift(direction,units) - example: L1.shift(UP,1) - roll() - physically roll the die to get a random number - random() - physically grab a tile (without looking) to get a random tile color

EXAMPLE CODE

<ol style="list-style-type: none"> 1. Pink.place(4,3) 2. Pink.place(6,2) 3. Pink.place(8,3) 4. Yellow.place(3,8) 5. Yellow.place(9,8) 6. Yellow.place(6,6) 	<ol style="list-style-type: none"> 1. L1.place(5,3) 2. Yellow.place(L1) 3. L2.place(L1) 4. L2.shift(RIGHT,2) 5. Pink.place(L2) 6. L1.shift(UP,2) 7. Yellow.place(L1) 8. L2.shift(RIGHT,2) 9. Pink.place(L2)
<ol style="list-style-type: none"> 1. tile = random() 2. tile.place(3,5) 3. tile = random() 4. tile.place(3,7) 5. tile = random() 6. tile.place(3,9) 	<ol style="list-style-type: none"> 1. x = roll() * 2 2. if x == 12 3. d = x - 1 4. x = d 5. y = roll() * 2 6. if y == 12 7. d = y - 1 8. y = d 9. Yellow.place(x,y) 10. L1.place(x,y) 11. if x > 5 12. L1.shift(LEFT,2) 13. else 14. L1.shift(RIGHT,2) 15. Pink.place(L1)
<ol style="list-style-type: none"> 1. x = roll() 2. y = roll() 3. Yellow.place(x,y) 4. d = x+2 5. i = y-2 6. Pink.place(d,i) 	

CODE EXAMPLE A

```
1. i = 0
2. while i < 5
3.     print(i)
4.     i = i + 1
5. i = 5
6. while i >= 0
7.     print(i)
8.     i = i - 1
```

CODE EXAMPLE D

```
1. i = true
2. while i == true
3.     d = roll()
4.     if d in [1,2,3]
5.         print(d)
6.     else
7.         i = false
```

CODE EXAMPLE B

```
1. i = 0
2. d = roll()
3. while ( d%2 == 0 )
4.     i = i + 1
5.     d = roll()
6. print(i)
```

CODE EXAMPLE E

```
1. x = roll()
2. if x == 1 or x == 2
3.     i = 2
4. else
5.     if x == 3 or x == 4
6.         i = 4
7.     else
8.         i = 6
9. while i > 0
10.    x = roll()
11.    print(x)
12.    i = i - 1
```

CODE EXAMPLE C

```
1. i = 0
2. x = 0
3. y = 0
4. while i < 5
5.     d = roll()
6.     if (d%2) == 0
7.         x = x + 1
8.     else
9.         y = y + 1
10.    i = i + 1
11. print(x,y)
```