

```

1  '''lecture_11_turtle_object_symbol_table.py|
2  Create 2 Turtle objects and a Screen object. Change a few properties of each object.
3  Oliver W. Layton
4  CS 151: Computational Thinking: Visual Media
5  Fall 2020
6  '''
7  import turtle as cookie
8
9
10 def goto(turt, x, y):
11     turt.goto(x, y)
12
13
14 def make_turtle(shape='turtle', penColor='white'):
15     turt = turtle.Turtle(shape=shape)
16     turt.color(penColor)
17     return turt
18
19
20 w = 1000
21 h = 800
22 screen = turtle.Screen()
23 screen.setup(width=w, height=h)
24
25 t1 = make_turtle()
26 t2 = make_turtle(shape='arrow', penColor='black')
27 t1.color('red')
28
29 goto(t1, 10, 10)
30
31 screen.exitonclick()
32

```

line 7

turtle module

<u>Name</u>	<u>type</u>	<u>Value</u>
forward	fun	→
right	fun	→
⋮	⋮	⋮

line 21 (end)

main

<u>Name</u>	<u>Type</u>	<u>Value</u>
turtle ^{cookie}	module	→
goto	fun	→
make_turtle	fun	→
w	int	1000
h	int	800

line 22

Main

<u>Name</u>	<u>Type</u>	<u>Value</u>
turtle	module	→
goto	fun	→
make_turtle	fun	→
w	int	1000
h	int	800

Screen object

Screen object

<u>Name</u>	<u>Type</u>	<u>Value</u>
exitonclick	fun	→
Setup	fun	→
width	int	1000
height	int	800

default
values

1000
800

line 23

Screen.Setup(width=w, height=h)

Screen.Setup(width=1000, height=800)

function/method table

<u>Name</u>	<u>Type</u>	<u>Value</u>
width	int	1000
height	int	800

line 24

Screen.Setup Symbol table goes away

line 25 +1 = make_turtle()

Main

<u>Name</u>	<u>Type</u>	<u>Value</u>
turtle	module	→
goto	fun	→
make_turtle	fun	→
w	int	1000
h	int	800
Screen	Object	→

Screen object

<u>Name</u>	<u>Type</u>	<u>Value</u>
exitonclick	fun	→
Setup	fun	→
width	int	1000
height	int	800

make_turtle

<u>Name</u>	<u>Type</u>	<u>Value</u>
Shape	str	'turtle'
penColor	str	'white'
turt	Object	

line 18

make Turtle object table turt = turtle.Turtle()

Turtle object

<u>Name</u>	<u>Type</u>	<u>Value</u>
Shape	str	'turtle'
Color	fun	→
goto	fun	→
penColor	str	'white'

turt. color		
<u>Name</u>	<u>Type</u>	<u>Value</u>
penColor	str	'white'

line 16 `turt. color( pen color)`

`t1 = make.turtle()`

line 17 `return turt` → go back to line 25

• `turt. color` goes away

Main		
Name	Type	Value
turtle	module	→
goto	fun	→
make_turtle	fun	→
w	int	1000
h	int	800

Screen object		
Name	Type	Value
exitonclick	fun	→
Setup	fun	→
Width	int	1000
height	int	800

Screen object →

f1 object

make_turtle		
Name	Type	Value
Shape	str	'turtle'
penColor	str	'white'
turt	Object	

Turtle object		
Name	Type	Value
Shape	str	'turtle'
Color	fun	→
goto	fun	→
penColor	str	'white'

line 18 `game`

line 26

Main

<u>Name</u>	<u>Type</u>	<u>Value</u>
turtle	module	→
goto	fun	→
make_turtle	fun	→
w	int	1000
h	int	800

Screen Object →

f1 Object

f2 Object

line 26 (new)

~~make_turtle~~

<u>Name</u>	<u>Type</u>	<u>Value</u>
Shape	str	'arrow'
penColor	str	'black'
turt	Object	

Turtle object

... arrow
black

Turtle object

<u>Name</u>	<u>Type</u>	<u>Value</u>
Shape	str	'turtle'
Color	fun	→
goto	fun	→
penColor	str	'white' 'red'

not affecting
Other object

line 27

f1. color('red')