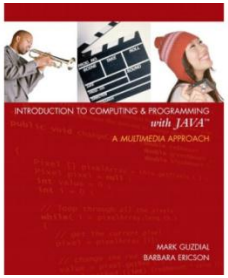
CSE8A Lecture2

- Check the class web page (and discussion board, linked form webpage) for news and info:

  cse8awinter13.weebly.com

- Lab starts 1/15/13. Discussion start week 1. Tutor hours start Wed 1/9/13.
- TODO:
  - Find a programming partner for PSA1 (due Monday 1/14/13 midnight)
  - For next class: 3.5-3.6, 4.1-4.2.



CLICKERS OUT!

8AL

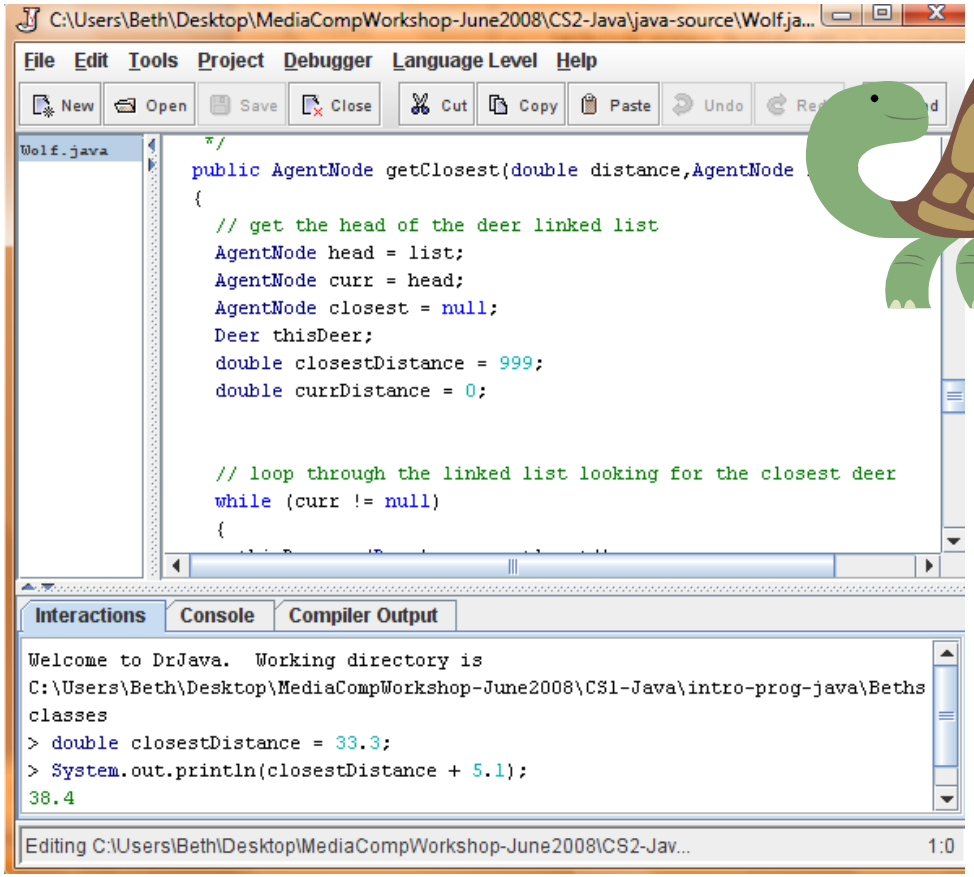
- You MUST show up to YOUR lab (the one you're enrolled in) on time (or early)
  - It's a 40 minute sprint… (then a 10 min quiz)
  - If you show up more than 5 minutes late or to the wrong section you will lose all your participation points.
  - Lab is in B240 (BASEMENT, elevator or outside entrance – no stairs from 1st floor)

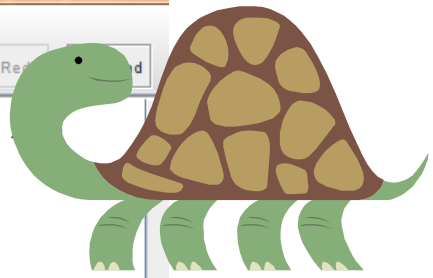
Pair Programming

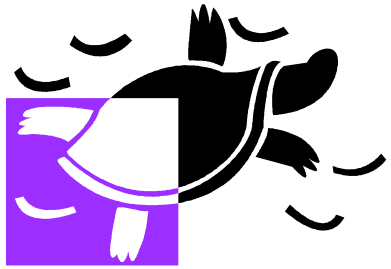
- Pair programming
  - Everyone must pair. If you have truly extenuating circumstances, see me in office hours or email me.
- Who will I pair with?
  - Partners
    - Find a partner after class or post on the Discussion forum
    - Work with your assigned lab partner
  - Meet with him/her and block out 6 hours a week you are available to work together in the lab.
    - If your schedules aren't compatible, find another partner!
- What is pair programming?
  - See the class web page (link from home page)! Practice in 8AL lab.

Today in CSE 8A

Chapters 2 and 3 (up to 50)







CLICKERS OUT

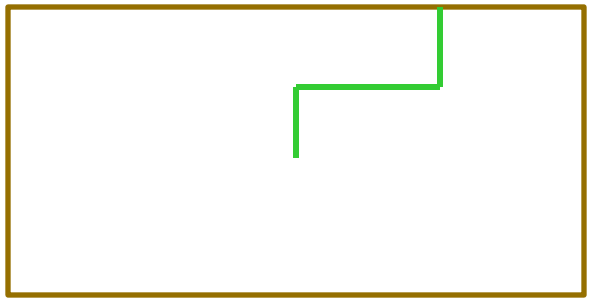
1) SOLO VOTE (1 min)
2) Discuss in team (2 min)
3) GROUP VOTE (30 sec)

What does this code draw?

```
World world1 = new World(200,100);
Turtle maria = new Turtle(100, 50, world1);
maria.forward(25);
maria.turnLeft();
maria.forward(50);
maria.turnRight();
maria.forward(25);
```

Hint: Turtles start facing “up”

A



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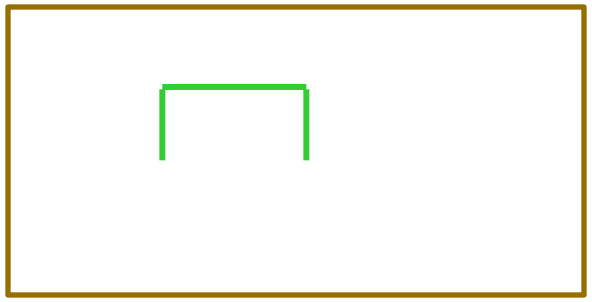

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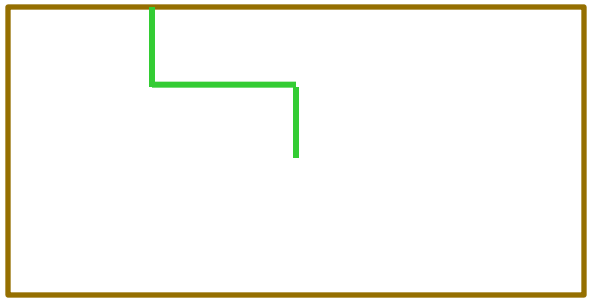

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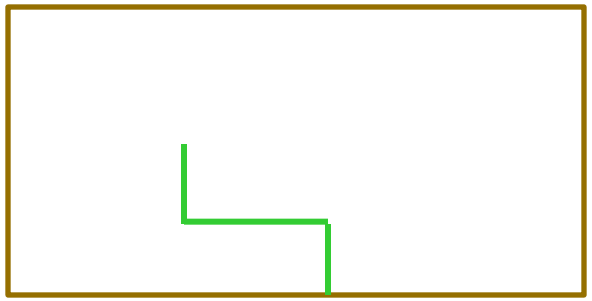


CS Concept: Sequential Execution

```
World world1 = new World(200,100);
Turtle maria = new Turtle(100, 50, world1);
maria.forward(25);
maria.turnLeft();
maria.forward(50);
maria.turnRight();
maria.forward(25);
```

Vs.

```
World world1 = new World(200,100);
Turtle maria = new Turtle(100, 50, world1);
maria.forward(25);
maria.forward(50);
maria.turnLeft();
maria.turnRight();
maria.forward(25);
```

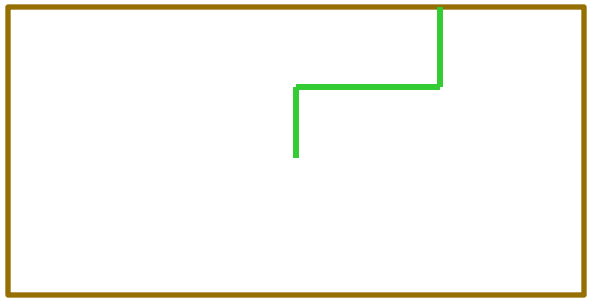
1) SOLO VOTE (1 min)
2) Discuss in team (2 min)
3) GROUP VOTE (30 sec)

What does this code output?

```
World world1 = new World(200,100);
Turtle maria = new Turtle(100, 50, world1);
maria.forward(25);
maria.forward(50);
maria.turnLeft();
maria.turnRight();
maria.forward(25);
```

Hint: Turtles start facing “up”

A



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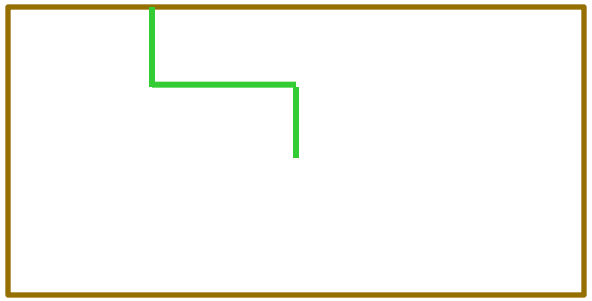

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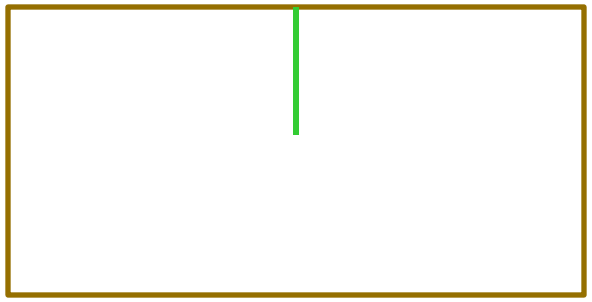

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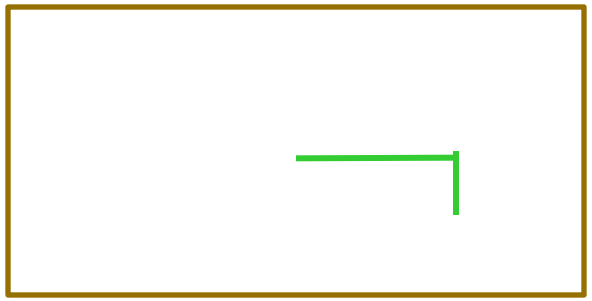


CS Concept: Sequential Execution

```
World world1 = new World(200,100);
Turtle maria = new Turtle(100, 50, world1);
maria.forward(25);
maria.turnLeft();
maria.forward(50);
maria.turnRight();
maria.forward(25);
```

Vs.

```
World world1 = new World(200,100);
Turtle maria = new Turtle(100, 50, world1);
maria.forward(25);
maria.forward(50);
maria.turnLeft();
maria.turnRight();
maria.forward(25);
```

ORDER MATTERS!

1) SOLO VOTE (1 min)
2) Discuss in team (2 min)
3) GROUP VOTE (30 sec)

How many objects are created in this code?

```
World world1 = new World(200,100);
Turtle maria = new Turtle(25, 25, world1);
Turtle jose = new Turtle(100, 50, world1);
maria.forward(25);
jose.forward(10);
maria.turnLeft();
maria.forward(50);
jose.forward(5);
```

A.1
B.2
C.3
D.4

1) SOLO VOTE (1 min)
2) Discuss in team (2 min)
3) GROUP VOTE (30 sec)

What does this code output?

```
World world1 = new World(200,100)
Turtle maria = new Turtle(25, 25, world1);
Turtle jose = new Turtle(100, 50, world1);
maria.forward(25);
jose.forward(10);
maria.turnLeft();
maria.forward(50);
jose.forward(5);
```

Hint: Turtles start facing “up”

A

C

B

D

CS Concept: Objects

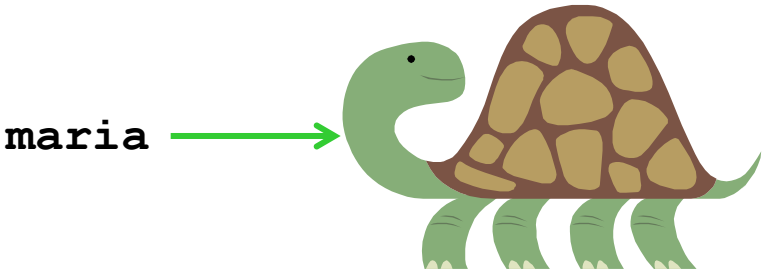
"Give me a new object, please"

```
Turtle maria = new Turtle(25, 25, world1);
```

The code that creates the object (constructor)

What kind of object

A variable that refers to the object



CS Concept: Objects

```
Turtle maria = new Turtle(25, 25, world1);
Turtle jose = new Turtle(100, 50, world1);
```

Two different turtles objects (instances of `class Turtle`) with the same capabilities

Other important Turtle methods (know these)

- turn
- penUp
- penDown
- show
- hide
- moveTo
- setName
- getName

http://www.cs.duke.edu/courses/fall06/cps001/doc/mediaClasses/SimpleTurtle.html

1) SOLO VOTE (30 secs)
2) Discuss in team (1 min)
3) GROUP VOTE (20 sec)

CS Concept: Assignment

- What is the output of this code?

```
int x = 3;
int y = 2;
int z = 2;
System.out.println(x == 3);
z = x + y;
System.out.println(y);
```

A)
```
3
5
```

B)
```
true
5
```

E) None of the above.

C)
```
3
2
```

D)
```
true
2
```

1) SOLO VOTE (30 secs)
2) Discuss in team (1 min)
3) GROUP VOTE (20 sec)

CS Concept: Data Types

- What is the output of this code?

```
int x = 3;
Turtle y = 2;
System.out.println(x == 3);
int z = x + y;
System.out.println(z);
```

A)
```
3
5
```

B)
```
true
5
```

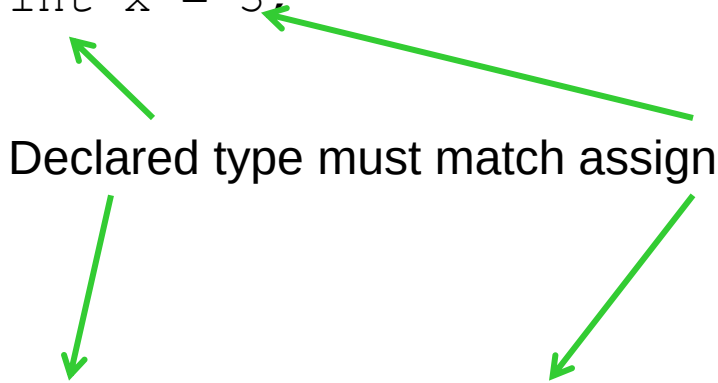
E) None of the above.

C)
```
3
false
```

D)
```
true
false
```

CS Concepts: Data Types and Assignment

```
int x = 3;
```



Declared type must match assigned data


```
Turtle y = new Turtle(myWorld);
```

Declaration and assignment on separate lines OK:

```
Turtle y;
y = new Turtle(myWorld);
```

Reassignment (without redeclaration) OK, even if variable is on RHS!

```
int x = 3;
x = x + 1;
```

In java, all variables have an explicit type!

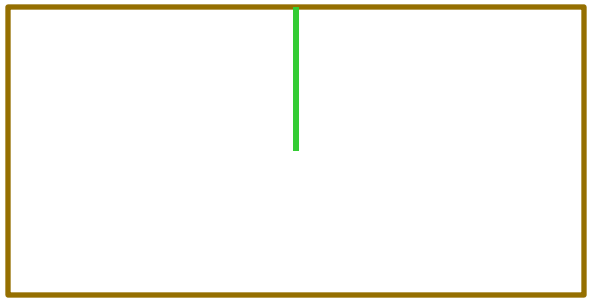
1) SOLO VOTE (30 secs)
2) Discuss in team (1 min)
3) GROUP VOTE (20 sec)

CS Concept: References

- What does this code draw?

```
World world1 = new World(200,100);
Turtle maria = new Turtle(25, 25, world1);
Turtle jose = new Turtle(100, 50, world1);
maria = jose;
maria.forward(50);
jose.turn(90);
jose.forward(50);
```

A



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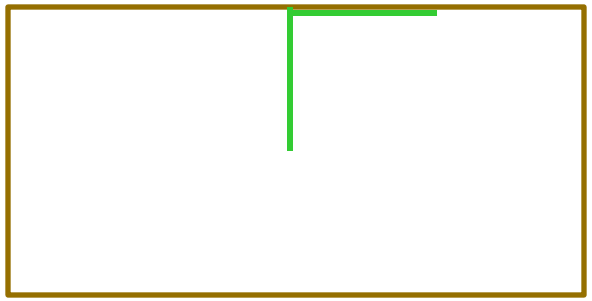

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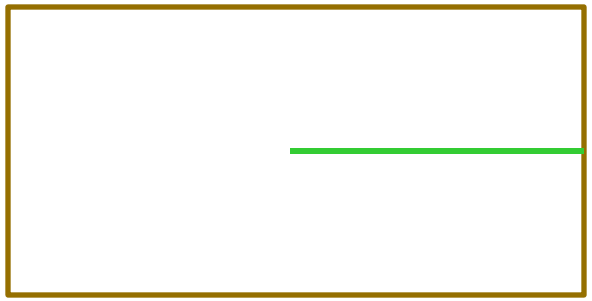

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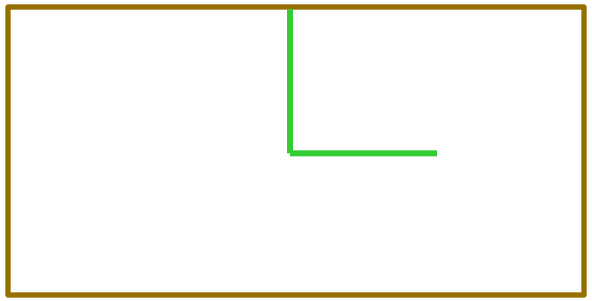
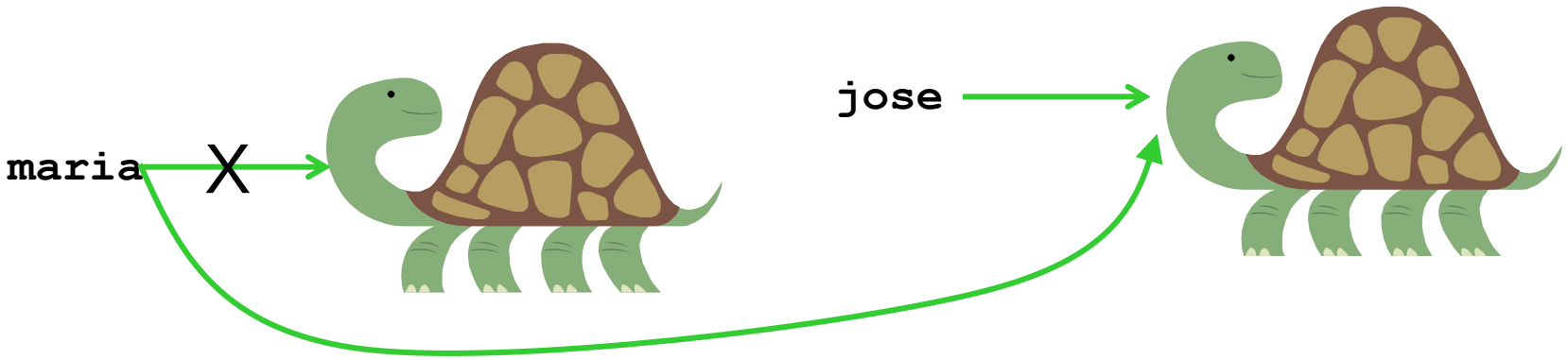


CS Concepts: References

```
World world1 = new World(200,100);
Turtle maria = new Turtle(25, 25, world1);
Turtle jose = new Turtle(100, 50, world1);
```


```
maria = jose;
```



TODO

- Find a partner and start on your PSA1
- Check the class web page and discussion board

  http://cse8awinter13.weebly.com/index.html
  https://piazza.com/#winter2013/cse8a

- For next class: read textbook pages Chapter 3.5-3.6, 4.1-4.2

and prepare for reading quiz