Model 1 Variables

Most programs store and manipulate data values. We use *variables* to give values meaningful names. The following code *declares* three variables and *assigns* them (using the = operator). Each variable is stored in the computer's memory, represented by the boxes on the right.

Java code	Computer memory

```
int dollars;
int cents;
double grams;

dollars = 1;
cents = 90;
grams = 3.5;
```

dollars   [1]

cents   [90]

grams   [3.5]

Questions (10 min)   Start time:

1. Identify the Java *keyword* used in a variable declaration to indicate

  a) an integer:

  b) a real number:

2. Consider numbers of dollar bills, cents, and grams. Which of these units only makes sense as an integer, and why?

3. What would you expect the following statements to print out?

  a) `System.out.println(dollars);`

  b) `System.out.println(cents);`

  c) `System.out.println(grams);`

4. In the previous question, how does the third printed line (c) differ from the first two?

5. What do you think is the purpose of a variable declaration?

6. What will be output by the following code, and why?

```
double one;
one = 1;
System.out.println(one);
```