2 Language Basics – Variables

Reference Type Variables

- Reference type variables "point" to an object of the reference type

```java
bikel = new Bicycle();
bike2 = new Bicycle();

bikel.gear = 3;

boolean c;
c = bikel.equals(bike2); // c == true
c = (bikel == bike2); // c == false
```

```java
memory [simplified model]
cell nr | cell name | cell content
--- | --- | ---
... | ... | ...
1149 | bikel | <1150>
1150 | bikel.cadence | 0
1151 | bikel.speed | 0
1152 | bikel.gear | 1
... | ... | ...
1327 | bike2 | <1405>
1405 | bike2.cadence | 0
1406 | bike2.speed | 0
1407 | bike2.gear | 1
... | ... | ...
```

Boolean c;
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c = bikel.equals(bike2);
// c = false
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```java
bikel = bike2;
```

```java
boolean c;
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bikel = bike2;
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Arrays

- Array: "Indexed list" of elements
  - Holds a fixed number of variables of a certain type (primitive or reference)
  - Is itself a reference type (see next slide)

```java
int[] someArray;
someArray = new int[6];
someArray[0] = 23;
someArray[1] = 12;
someArray[5] = 4 + someArray[2];
```

```java
String[] someOtherArray;
someOtherArray = new String[30];
someOtherArray[17] = "bla Bla";
```

```java
AnyClass[] thirdArray;
thirdArray = new AnyClass[45];
thirdArray[44] = new AnyClass();
thirdArray[22 * 2].someMethod();
```