

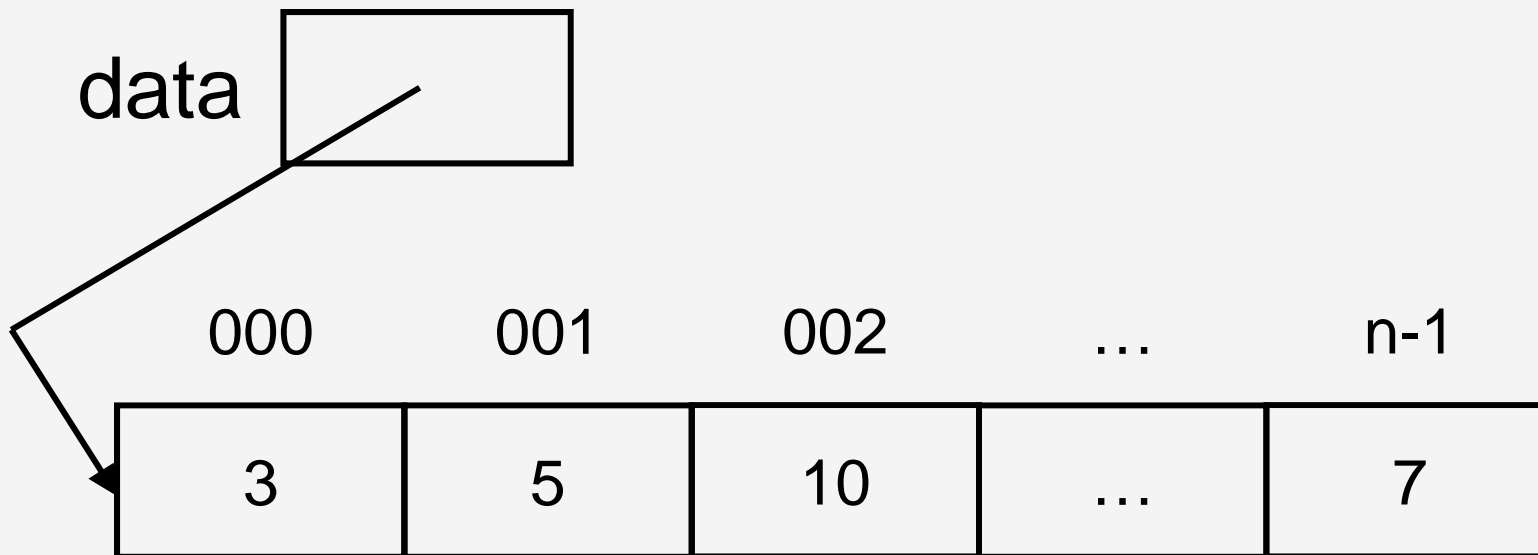
*ITEC1620*  
*Object-Based Programming*

Lecture 18  
Arrays of Objects

## *Review*

---

- Arrays access a data block/table by using offsets



## *Review II*

---

<datatype> [] arrayName;

int[] data;

- Array declarations reserve a single space of memory
- [] specifies space has array reference
- <datatype> specifies what it is a reference to

data



## *Review III*

---

```
arrayName = new <datatype> [n];  
data = new int [10];
```

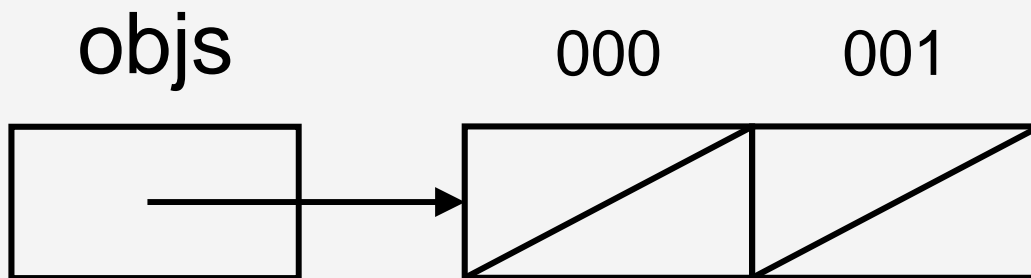
- new requests space from OS
- n specifies how much space
- “Construction” returns a reference
  - Reference (arrow) is stored in arrayName

## *Arrays of Objects*

---

- What if the array datatype is an object?

`AnInt[] objs = new AnInt[2];`



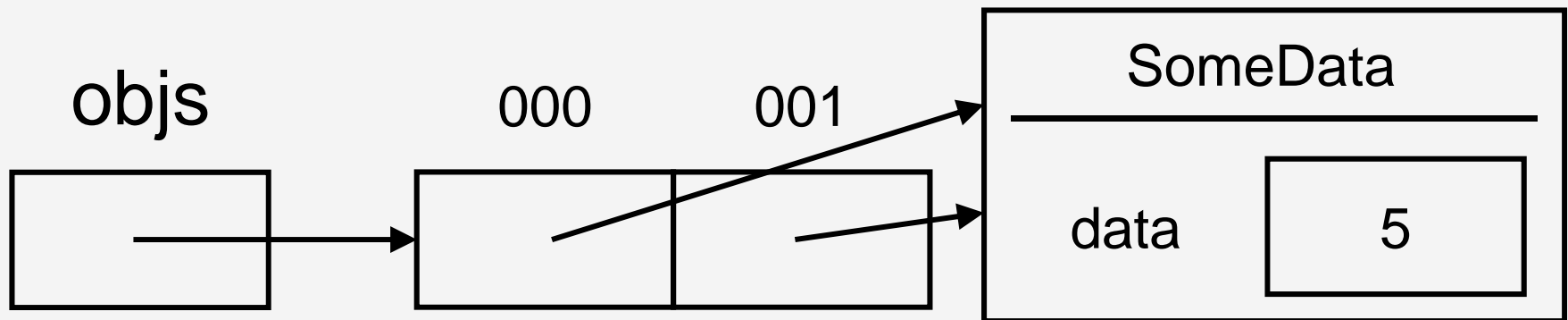
## *Arrays of Objects II*

---

- The constructor “new AnInt[2]” only allocates the array space
- Array memory locations are initialized like all objects
  - 0 for numbers
  - false for booleans
  - null for objects

## *Arrays of Objects III*

- Objects must be created or assigned  
    `objs[0] = new AnInt(5);`  
    `objs[1] = objs[0];`



*Questions?*

---



## *Example*

---

- Create an array of the 10 smallest Circles where each Circle is centred on the x-axis and passes through the origin

```
public class Circle
{
    public Circle (Point centre, int radius) {}
}
```

---

```
//Circle[] circles = new Circle[10];
```

## *Example II*

---

- One Class
  - DigitCode
- Write a code fragment

```
// DigitCode[] codes;
```

## *Readings and Assignments*

---

- Text sections (5<sup>th</sup> or 6<sup>th</sup> edition)
  - 7.3, 7.4
- Text sections (7<sup>th</sup> edition)
  - 8.3, 8.4
- Lab Assignment 5
  - Determine flight costs
    - Method returns an array of cities
    - Use cities to build an array of costs