

ITEC1620
Object-Based Programming

Lecture 16
Object-Based
Programming II

Objects in Objects

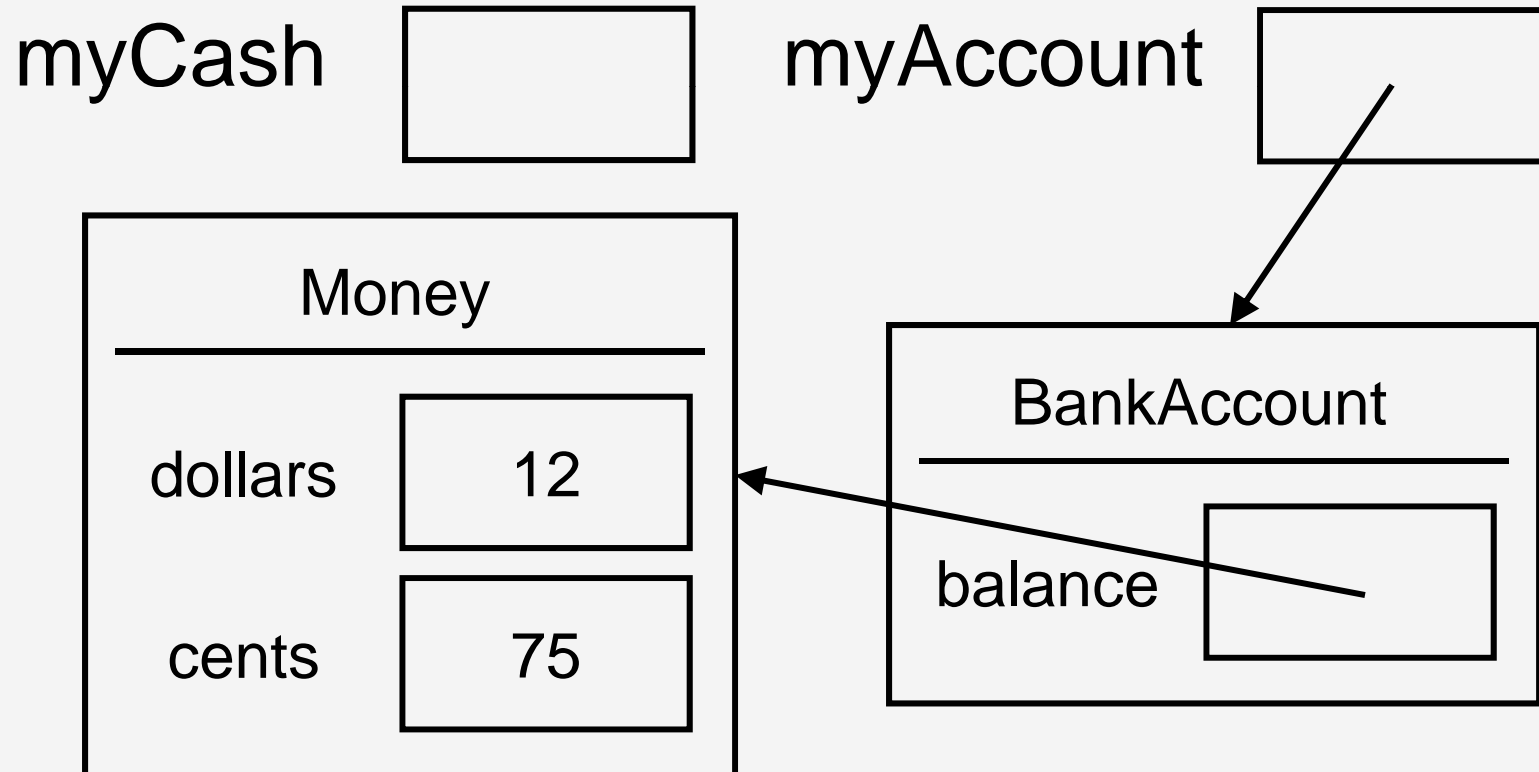
- A class is a collection of related data
- Some of this data may have already been aggregated into classes
- Objects in objects

Objects in Objects II

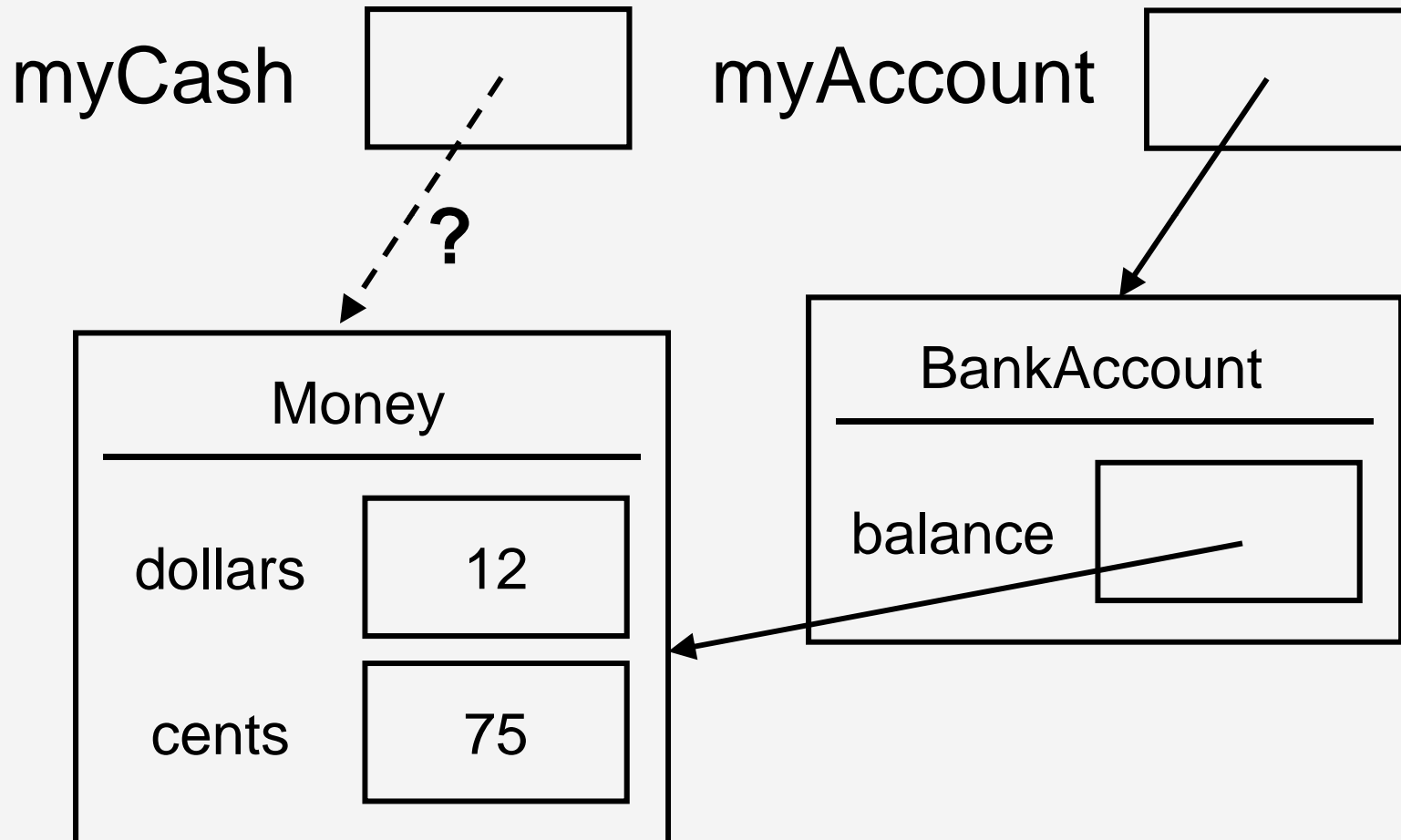
- BankAccount
 - ClientInformation client
 - String accountNumber
 - Money balance
 - float interestRate
 - AccountInformation account

Objects in Objects III

```
myCash = myAccount.getBalance();
```



Objects in Objects IV



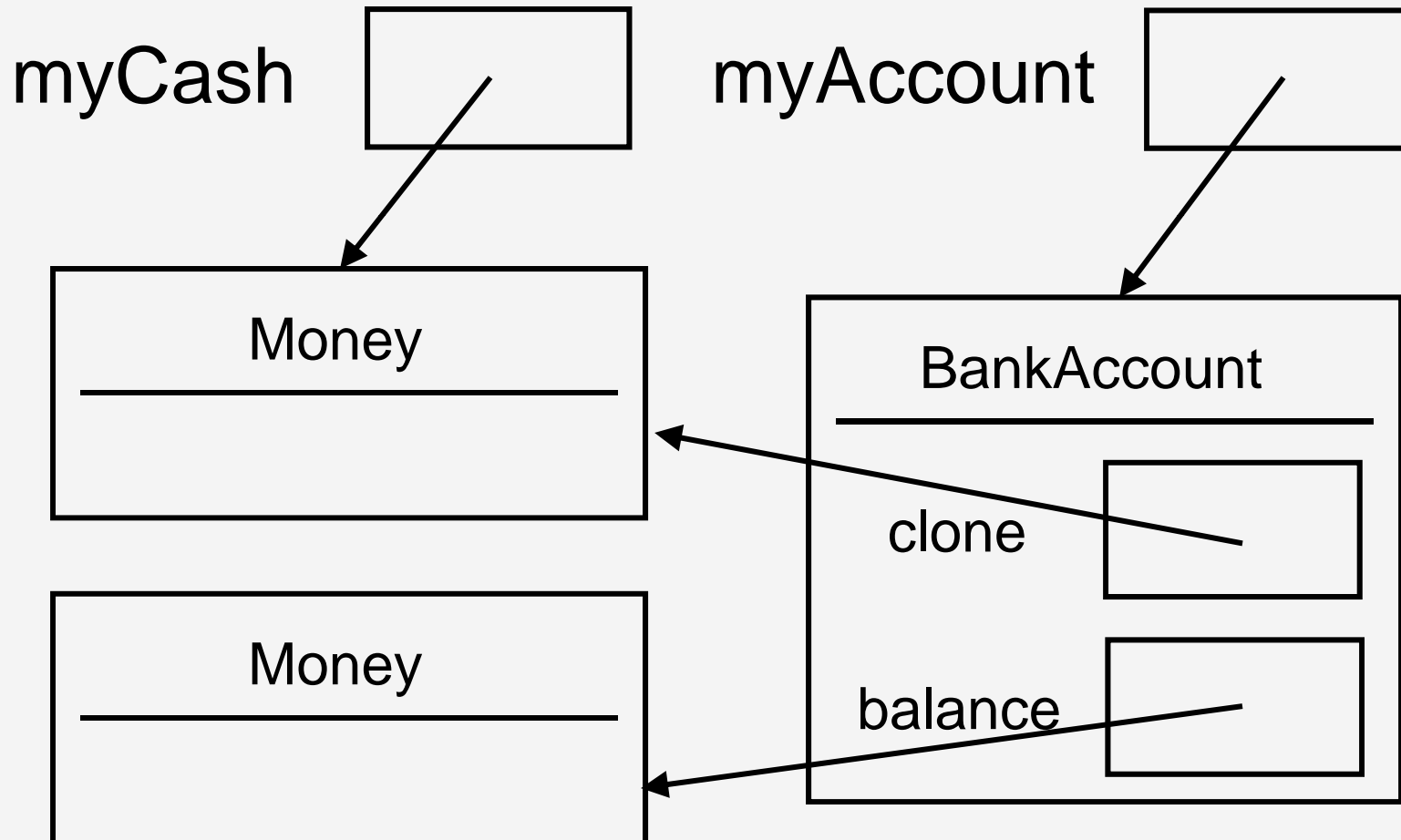
Objects in Objects V

- Problem?

Objects in Objects VI

- Pass-by-copy
 - Here's a copy of the data
- Pass-by-reference
 - Here's where the data is

Objects in Objects VII



Review

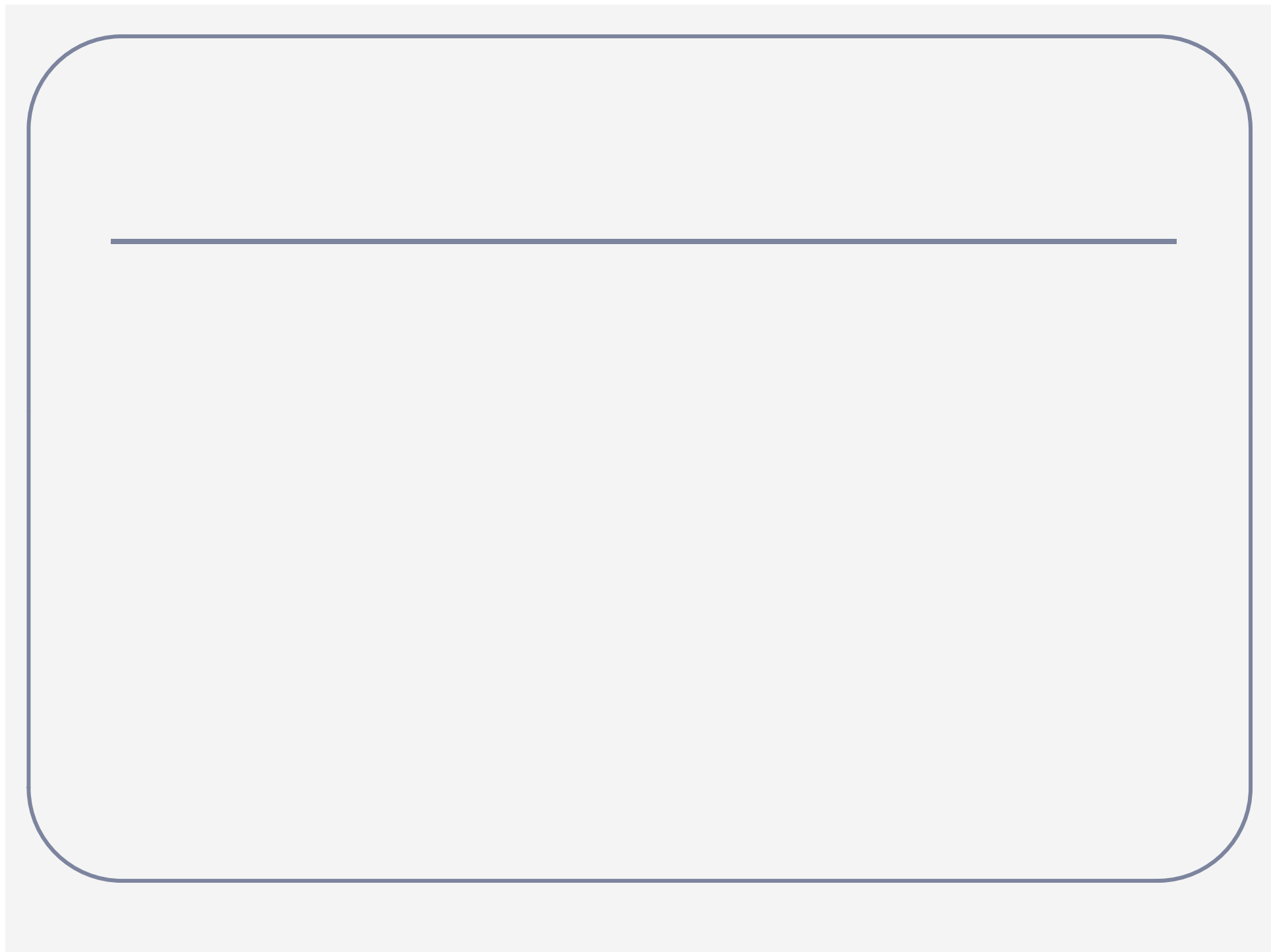
- Objects are a collection of data
- Use methods to access data

- Money → dollars, cents
- BankAccount → balance
- CashCard → balance, MAX_BALANCE

Example

- Three classes
 - CallRecord
 - CallingCard
 - Time
- Two code fragments (part of PhoneCompany)

```
// calculate end time  
CallRecord phoneCall;  
Time endTime;
```



```
// calculate unpaid time  
CallRecord call;  
CallingCard card;  
Time unpaid;
```

