

- Part a

The attributes of a Staff card object are:  
cardNumber, name, dept., expiryDate
- Part b

The attributes of a Wholesale customer object are:  
name, address, phone#, email, account#, creditLimit, contactName

Exercise 4.9

Additions to Table 4.3 are:

Table E.2: Answer to Exercise 4.9

| Object name | Class   | Attributes        | Response to greet() message |
|-------------|---------|-------------------|-----------------------------|
| george      | Briton  | language: English | Good morning                |
| antonio     | Italian | language: Italian | Buongiorno                  |

Exercise 4.10

The message would be: jojo.perform()

Exercise 4.11

See Table E.3.

Notice that we have not completed an entry for AnimalRobot as it would make no sense to define behaviour and values for an unspecified type of animal. Although a method has been defined for its perform() operation, common sense tells us that this call can never be instantiated and should be declared abstract. We can do this by annotating the class with the word {abstract}, see Figure E.25.

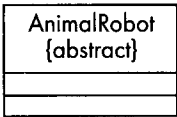


Figure E.25 Abstract class

Exercise 4.12

The abstract classes in the Robot hierarchy are Robot, HumanoidRobot, DomesticRobot and AlienRobot because they have no method defined for the perform() operation; also AnimalRobot (see answer to Exercise 4.11).