Exercise

Identify the classes

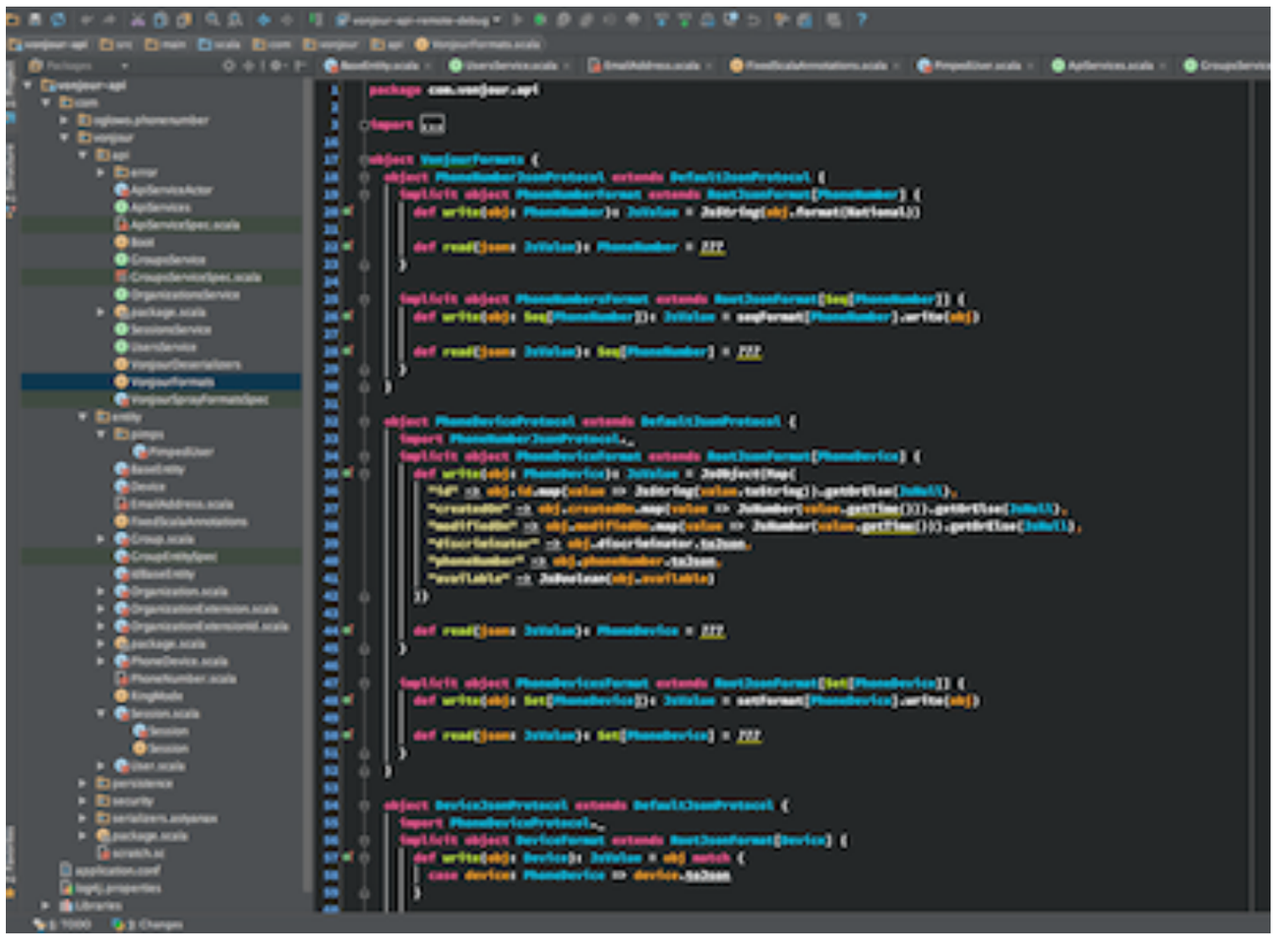
```
String s;
int sum = 1000;
ArrayList list = new ArrayList();
```

Classes vs Objects

Solution

```
String s;
int sum = 1000;
ArrayList list = new ArrayList();
```

IDEs can help us out with colour coded classes



Exercise

Identify the objects and classes

```
String s;
double delta = 1.89;
boolean equal = false;
Object object;
Integer count = new Integer(300);
```

Solution

Exercise

Identify the objects and classes

```
String s;
double delta = 1.89;
boolean equal = false;
```

```
Object object;
Integer count = new Integer(300);
```

Exercise

Distinguish between instantiation, declaration and initialisation

```
String s;
s = “Clear Tape”;
ArrayList stationery;
stationery = new ArrayList();
new File(“stocks.txt”);
String message = new String(“Out of Stock”);
```

Exercise

Solution

Distinguish between instantiation, declaration and initialisation

```
String s; // Declaration
s = “Clear Tape”; // Initialisation
ArrayList stationery; // Declaration
stationery = new ArrayList(); //Instantiation
new File(“stocks.txt”); //Instantiation, no Declaration!
String message = new String(“Out of Stock”); //all 3
```

Exercise

Identify the objects and their associations in the following scenario.

A point-of-sale (POS) system is a computerised application used in a retail store to record sales and handle payments.

Solution

Exercise

Identify the objects first

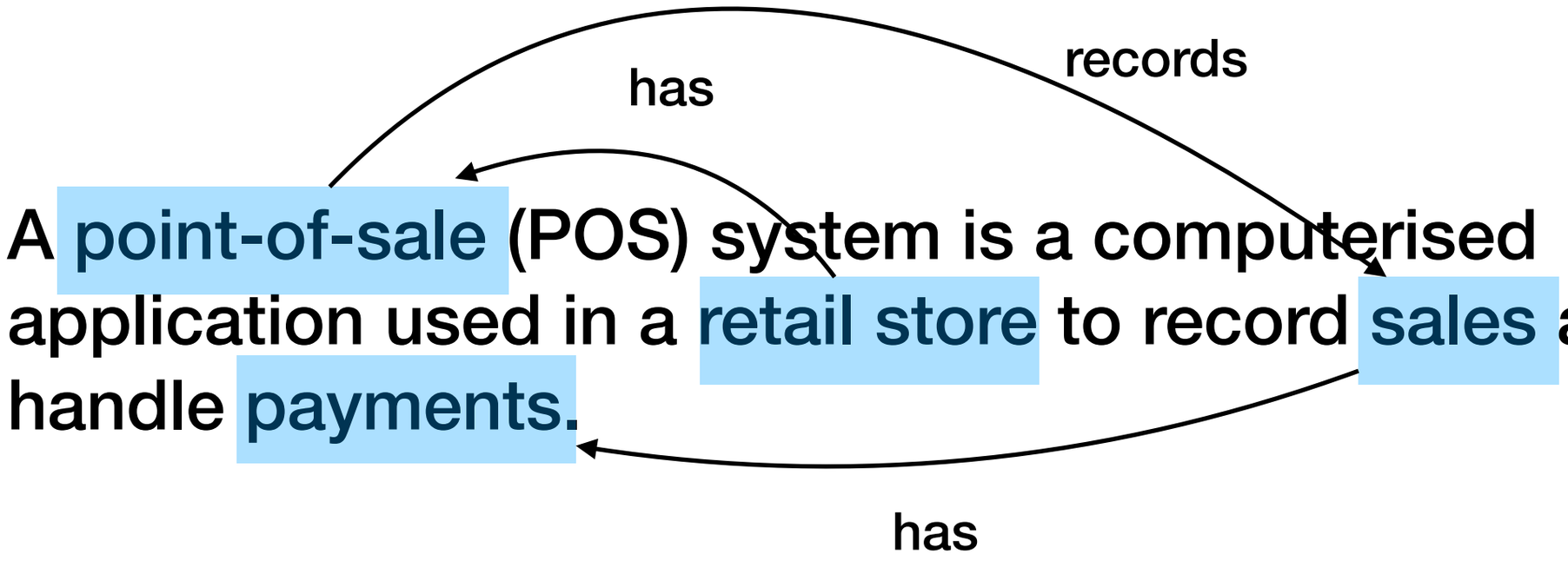
Objects

A point-of-sale (POS) system is a computerised application used in a retail store to record sales and handle payments.

Solution

Exercise

Next, identify the main associations between the objects.

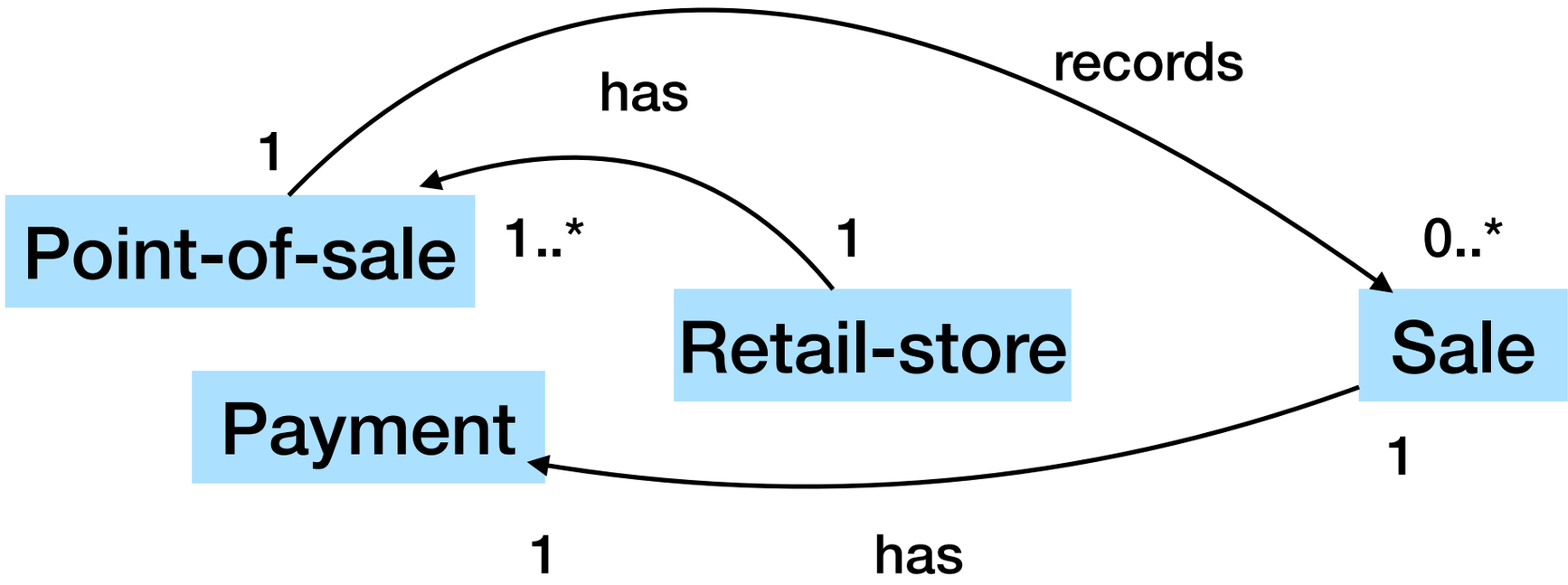


Associations

Exercise

Solution

Clean up and assign cardinalities.



Cardinalities

Exercise

Identify the objects and their relationships in the following scenario.

Payments can be either cash or card payments. Card payments can be either debit card or credit card. Credit card payments are subject to a 4% fee.

Solution

Exercise

Identify the objects

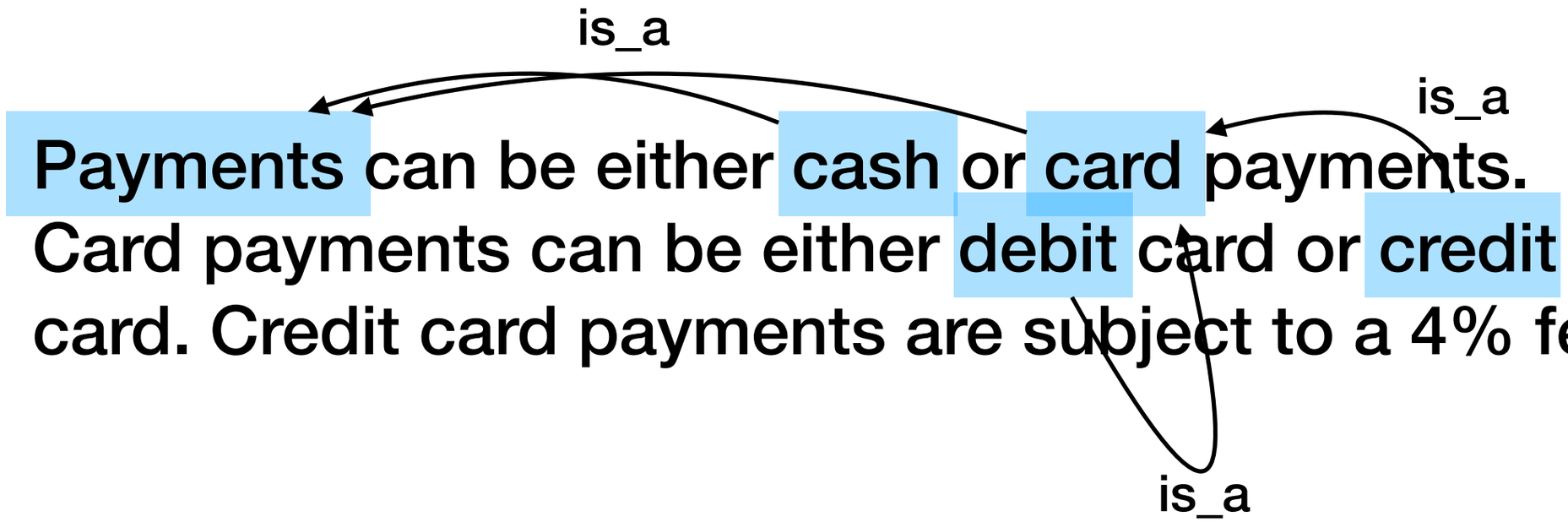
Payments can be either cash or card payments. Card payments can be either debit card or credit card. Credit card payments are subject to a 4% fee.

Objects

Exercise

Solution

Identify relationships

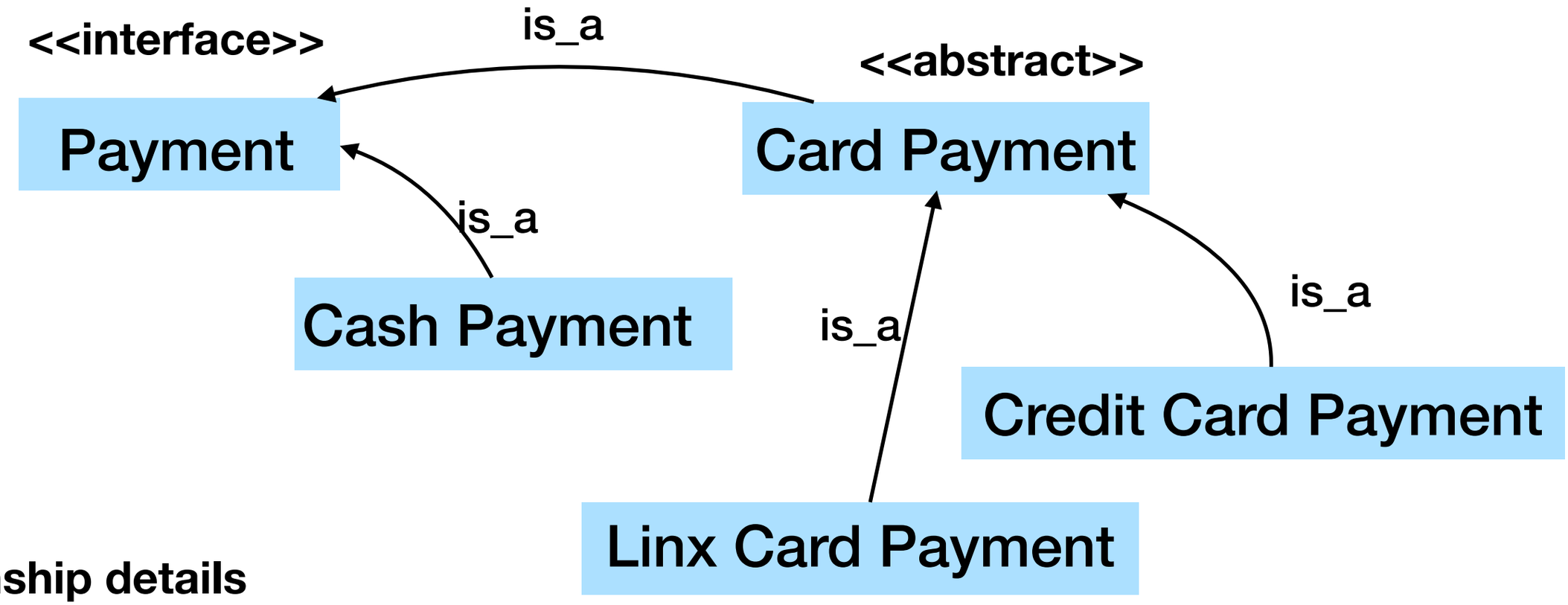


Relationships

Exercise

Solution

Fine tune



Relationship details

References

- Booch, Grady. (1988) OBJECT-ORIENTED ANALYSIS AND DESIGN
- Mohan, Permanand (2013) FUNDAMENTALS OF OBJECT-ORIENTED PROGRAMMING IN JAVA