

Ch.2 Understanding Class Definitions

Making Decisions

Conditional Statements (*if* statements)

General Form of Conditional Statements

```
if (some true/false test)
{
    Do the statements here if the
    test gives a true result
}
else
{
    Do the statements here if the
    test gives a false result
}
```

Conditional Statement in Java

```
// only allow positive amounts
// to be added to the balance
if (amount > 0)
{
    balance = balance + amount; // amount > 0
}
else
{
    // some sort of error message if amount <= 0
}
```

Relational Operators

The relational operators allow us to compare one expression to another to form a *boolean expression* (which gives a true or false result)

Operator	Meaning	Example	Result
==	equal to	5 == 5	true
!=	not equal to	3 != 4	true
>	greater than	10 > 9	true
>=	greater than or equal to	6 >= 6	true
<	less than	1 < 2	true
<=	less than or equal to	7 <= 7	true

Assigned Work

Read pages 36 to 40 (Section 2.10 to 2.12)

Record your answers in a text document or OpenOffice document

Complete exercises 2.43 to 2.52

Section 2.12 Exercises

2.47 After a ticket has been printed, could the value in the **balance** field ever be set to a negative value by subtracting **price** from it?

No, this cannot happen. The code for **printTicket** checks if **balance** is *greater than or equal to* **price** before it does the subtraction.

If the **balance** is *less than* **price**, which would produce a negative result, no subtraction is performed.

Section 2.12 Exercises

2.47 continued

```
if (balance >= price) {  
    ...  
    balance = balance - price;  
    // balance is the bigger number, so  
    // the result will be positive (or zero)  
} else {  
    ...  
    // no subtraction occurs here, so we  
    // cannot get a negative result  
}
```

Section 2.12 Exercises

2.51 Write an if statement that will compare the value in **price** against the value in **budget**. **If price is greater than budget** then print the message...

```
if (price > budget)
{
    System.out.println("Too expensive");
}
else
{
    System.out.println("Just right");
}
```


Section 2.12 Exercises

2.52 Modify your answer to 2.51 so the message if the price is too high includes the value of your budget.

```
if (price > budget)
{
    System.out.println("Too expensive");
    System.out.println("Budget is " + budget);
}
else
{
    System.out.println("Just right");
}
```