

## Chapter 8

# Making Decisions:

# How to code “if” statements

## The equality operators

Operator	Description
==	Equal
!=	Not equal

## The identity operators

Operator	Description
===	Equal
!==	Not equal

## Description

- The *equality operators* perform *type coercion*.
- The *identity operators* do not perform type coercion.

## Relational operators

Operator	Description
<	Less than
<=	Less than or equal
>	Greater than
>=	Greater than or equal

## Comparing strings to numbers

Expression	Result
<code>1 &lt; "3"</code>	true
<code>"10" &lt; 3</code>	false

# The logical operators

Operator	Name
!	NOT
&&	AND
	OR

## The NOT operator

`!isNaN(number)` `isNaN` means "is not a number"

## The AND operator

`age >= 18 && score >= 680`

## The OR operator

`state == "CA" || state == "OR"`

## An if clause with one statement and no braces

```
if ( taxRate = 0 ) taxRate = 0.075;
```

## An if clause with one statement and braces

```
if ( numItems > 99 )  
{  
    alert("You qualify for a free gift!.");  
}
```

## If and else clauses with no braces

```
if ( age >= 18 )  
    alert("You may vote.");  
else  
    alert("You may not vote.");
```

## Braces make your code easier to modify

```
if ( score >= 680 )  
{  
    alert("Your loan is approved.");  
}  
Else  
{  
    alert("Your loan is not approved.");  
}
```

## An if statement with one else if clause

```
if ( age < 18 )
{
    alert("You're too young for a loan.");
}
else if ( score < 680 )
{
    alert("Your credit score is too low for a loan.");
}
```

## Statement with an else if and an else clause

```
if ( age < 18 )
{
    alert("You're too young for a loan.");
}
else if ( score < 680 )
{
    alert("Your credit score is too low for a loan.");
}
Else
{
    alert("You're approved for your loan.");
}
```

# An if statement with multiple else if clauses

```
rateIsValid = false;
if ( isNaN(rate) )
{
    alert("Rate is not a number.");
}
else if (rate < 0)
{
    alert("Rate cannot be less than zero.");
}
else if (rate > 0.2)
{
    alert("Rate cannot be greater than 20%.");
}
else
{
    rateIsValid = true;
}
```



## If statements to determine student grades

```
if ( average >= 89.5 )
{
    grade = "A";
}
else if ( average >= 79.5 )
{
    grade = "B";
}
else if ( average >= 69.5 )
{
    grade = "C";
}
else if ( average >= 64.5 )
{
    grade = "D";
}
else
{
    grade = "F";
}
```