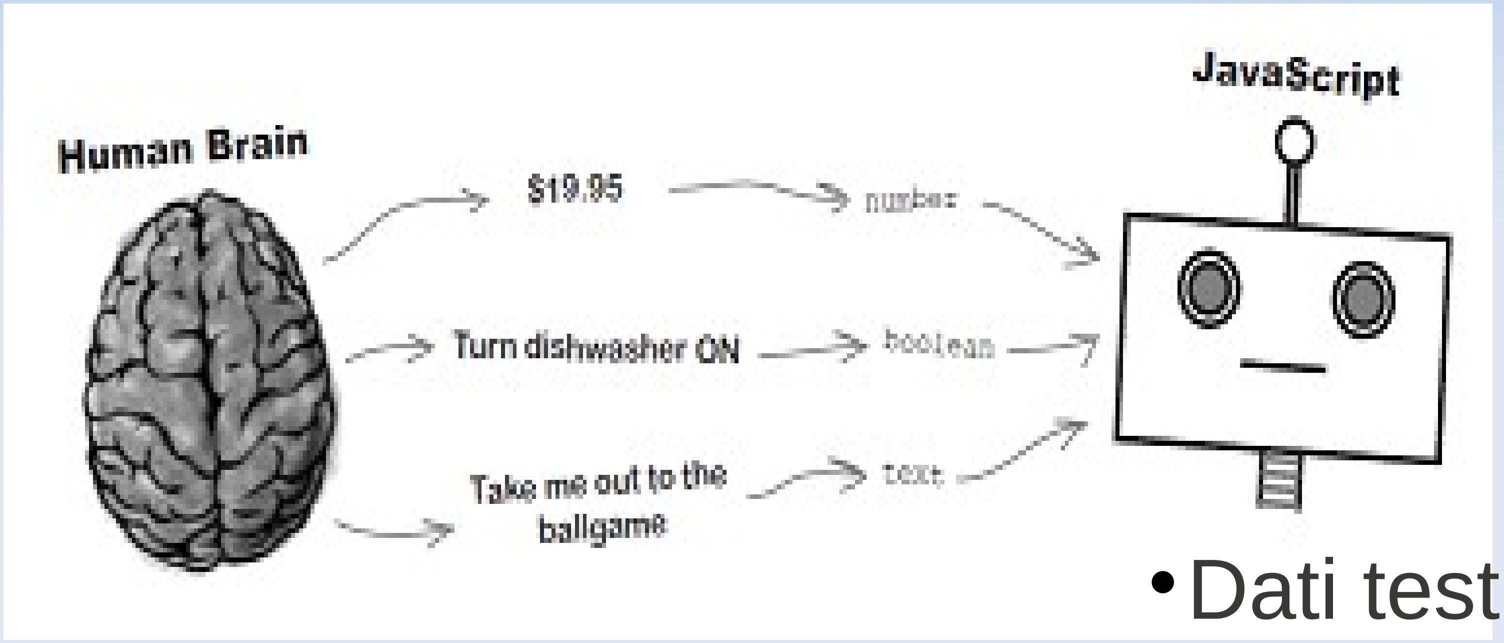
GESTIONE DEI DATI ATTRAVERSO JAVASCRIPT

Head First JavaScript Capitolo 2

Gli script lavorano con tipi di dati diversi



- Dati testuali
- Numeri
- Booleani

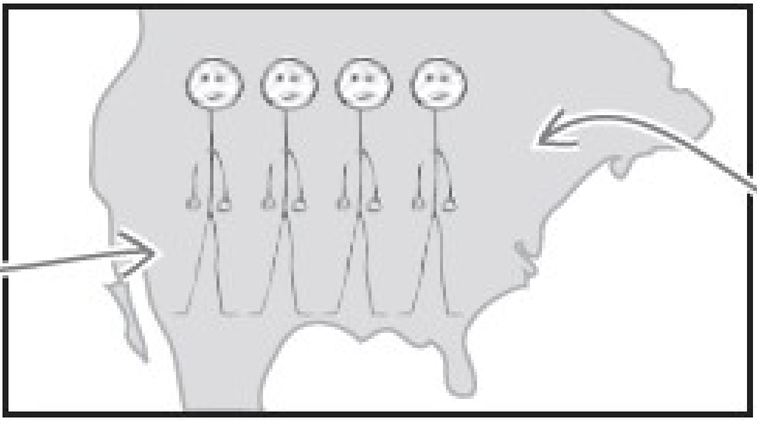
Variabili & Costanti

I tipi delle variabili e i tipi delle costanti sono assegnati automaticamente

Constant

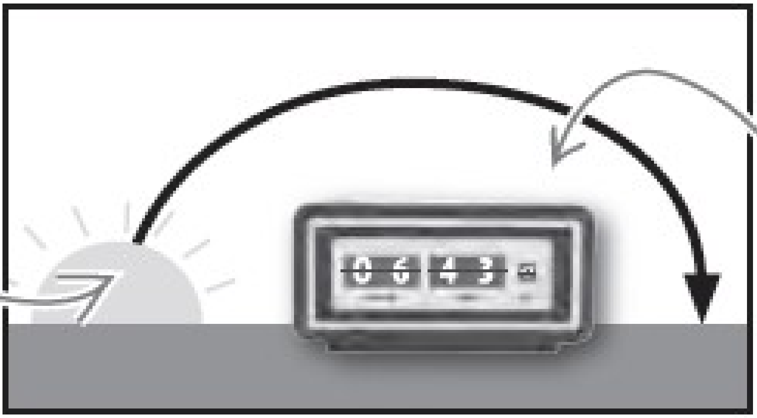
Variable

Land area of 3.5 million square miles—a constant (unless you wait around long enough for the Earth's tectonic plates to shift).



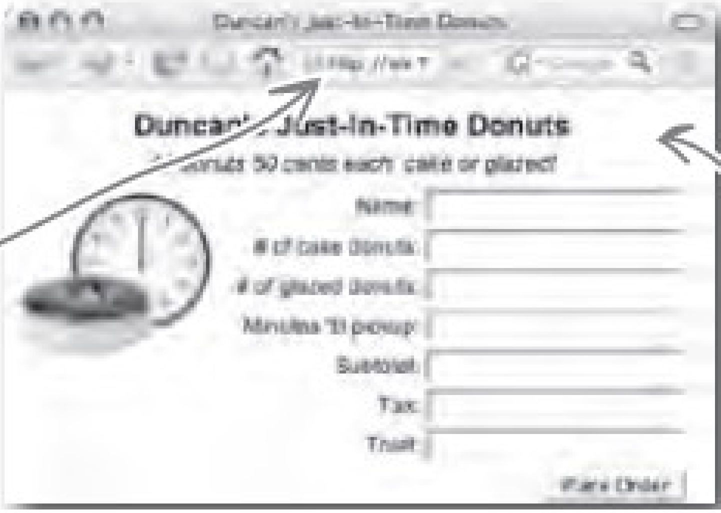
Population of 300 million people—a variable since the U.S. population is still on the rise.

24 hours in a day—a constant as far as humans are concerned, even though the moon is slowly leaving us.



Sunrise at 6:43am—a variable since the sunrise changes every day.

URL of web page is www.duncansdonuts.com—a constant, unless the donut biz takes a dramatic downturn.



Duncan's Just-In-Time Donuts

Donuts 50 cents each, cake or glazed!

Name:

# of cake Donuts:

# of glazed Donuts:

Minutes 'til pickup:

Subtotal:

Tax:

Total:

Place Order

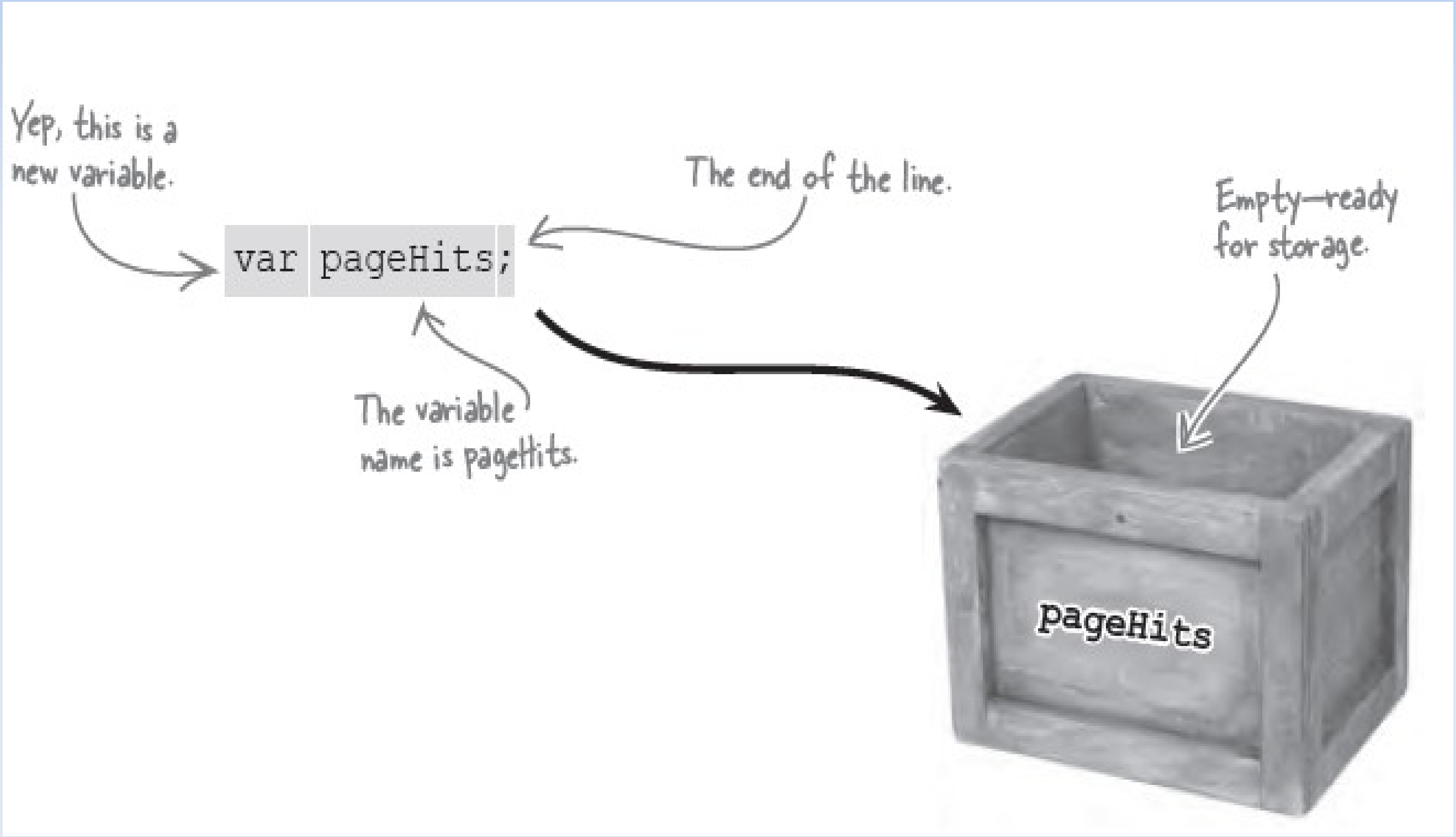
324 total page hits—a variable since users are constantly visiting the page and changing the hit count.

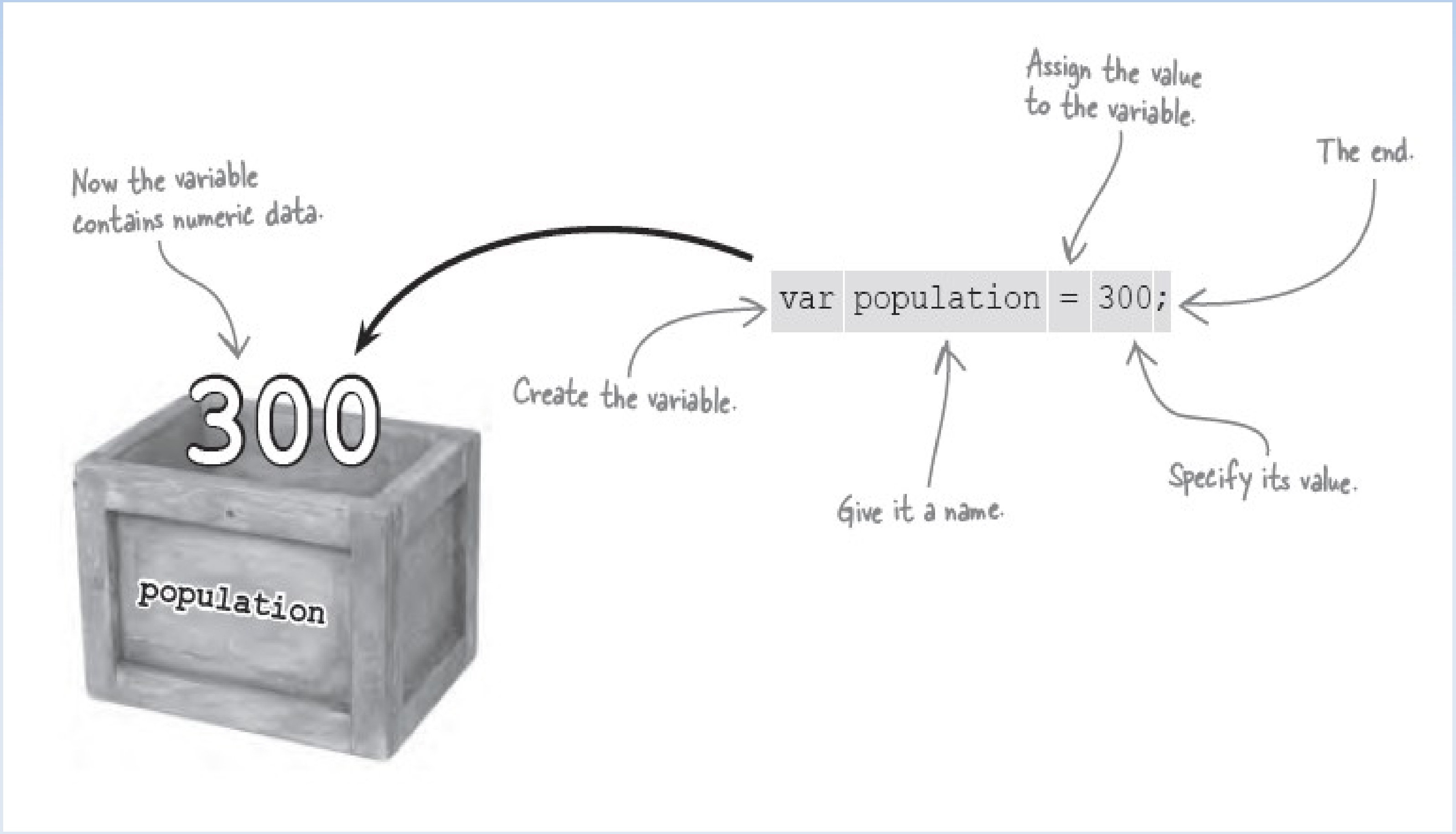
Variabili

var nome_variabile;

- Unica e significativa
- Può variare il suo contenuto
- Può essere inizializzata

var nome_variabile = valore;


Yep, this is a new variable.
var pageHits;
The end of the line.
The variable name is pageHits.
Empty—ready for storage.
pageHits

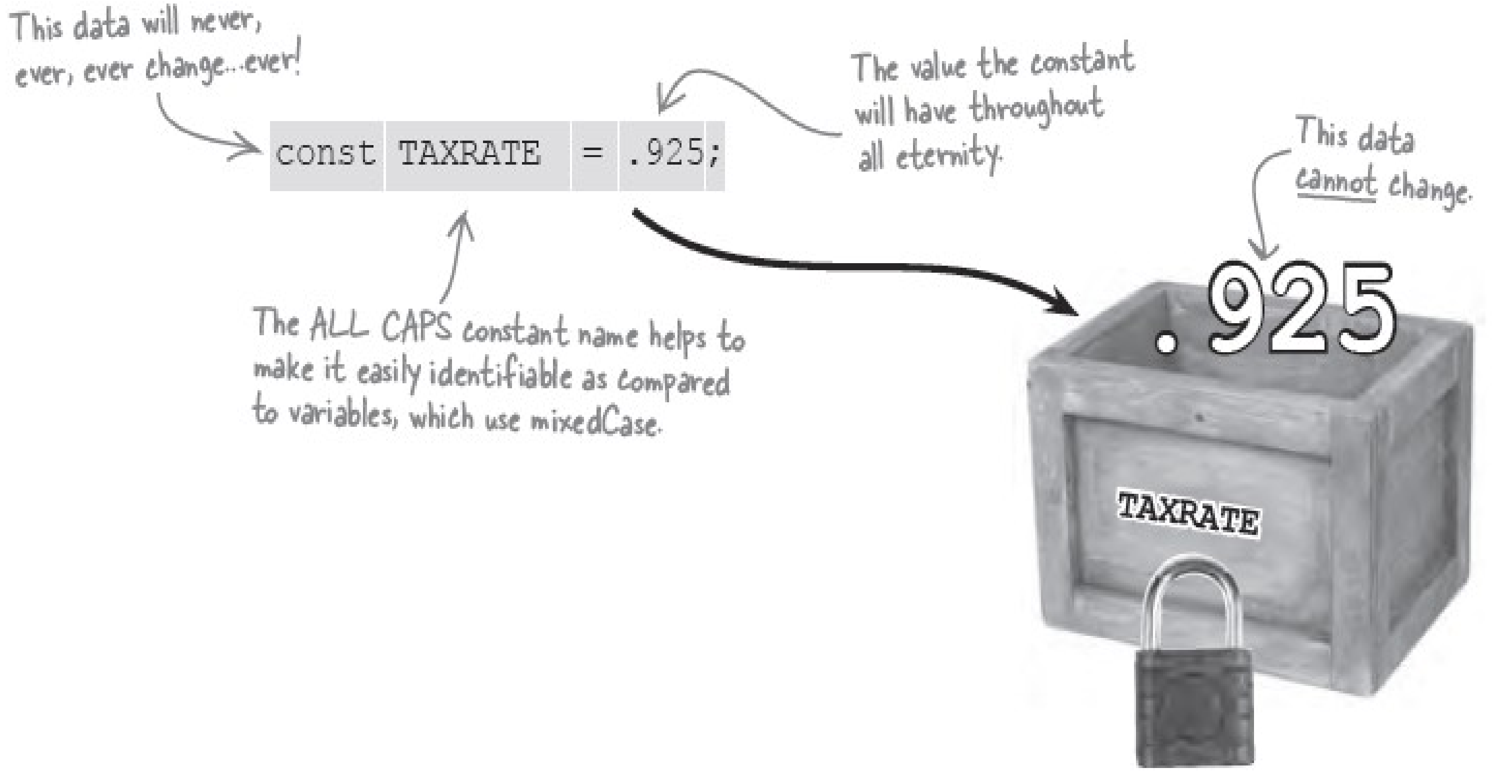

Assign the value to the variable.
The end.
Now the variable contains numeric data.
var population = 300;
300
Create the variable.
population
Give it a name.
Specify its value.

Costanti

const nome_variabile = valore;

- Le costanti si oppongono ai cambiamenti
- Le costanti hanno i nomi in maiuscolo

```
const TAXRATE = 0.95;
```



This data will never, ever, ever change...ever!

```
const TAXRATE = .925;
```

The value the constant will have throughout all eternity.

The ALL CAPS constant name helps to make it easily identifiable as compared to variables, which use mixedCase.

This data cannot change.

Identificatori

Identificatori = Nomi delle variabili

- ➔ Lunghezza di almeno un carattere
- ➔Descrittivi
- ➔Facilmente identificabili
- ➔Rispettano convenzioni

Primo carattere

_ (underscore)

$

Lettera qualsiasi

Caratteri Successivi al primo

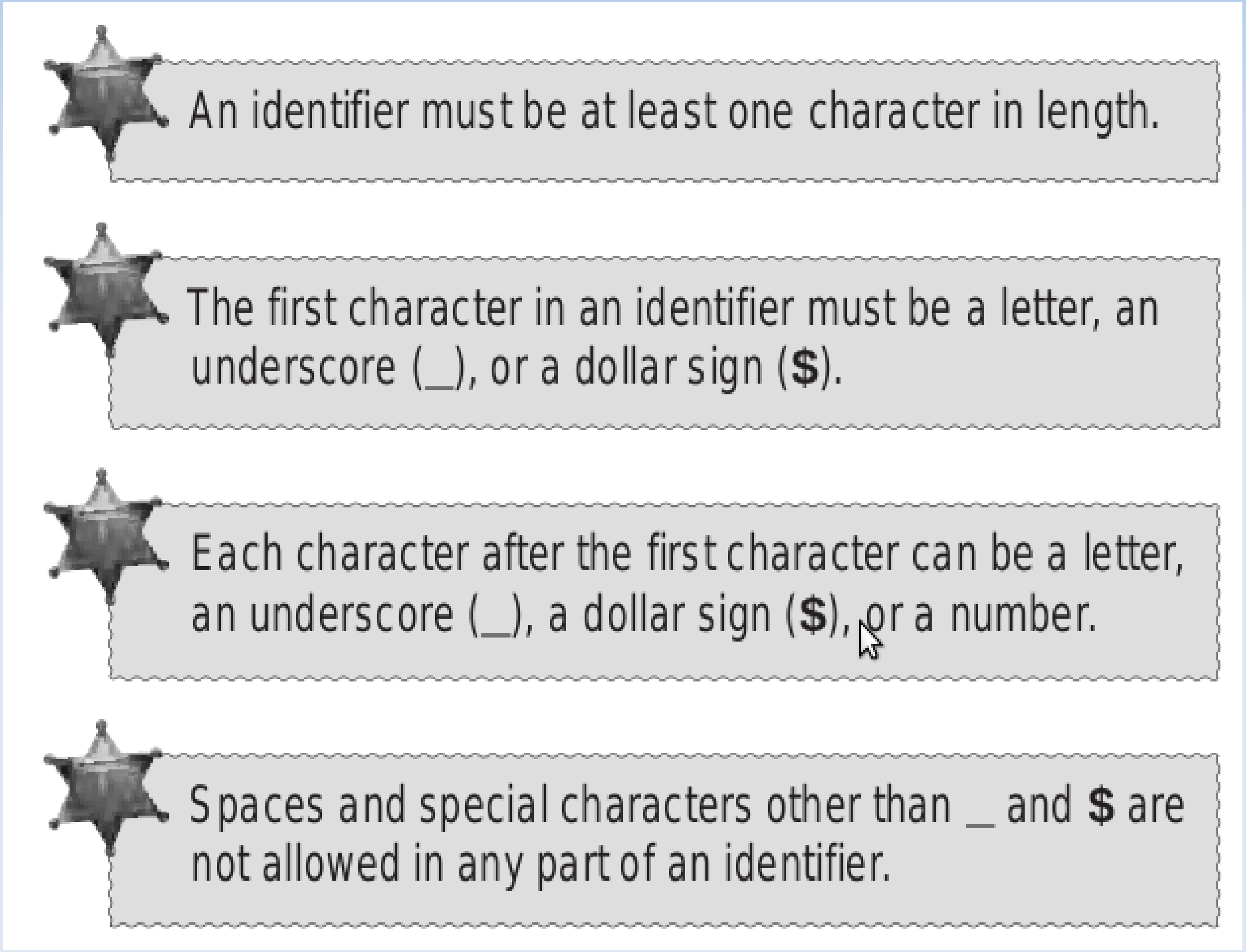
_ (underscore)

$

Lettera qualsiasi

Numero qualsiasi

RIASSUMIAMO



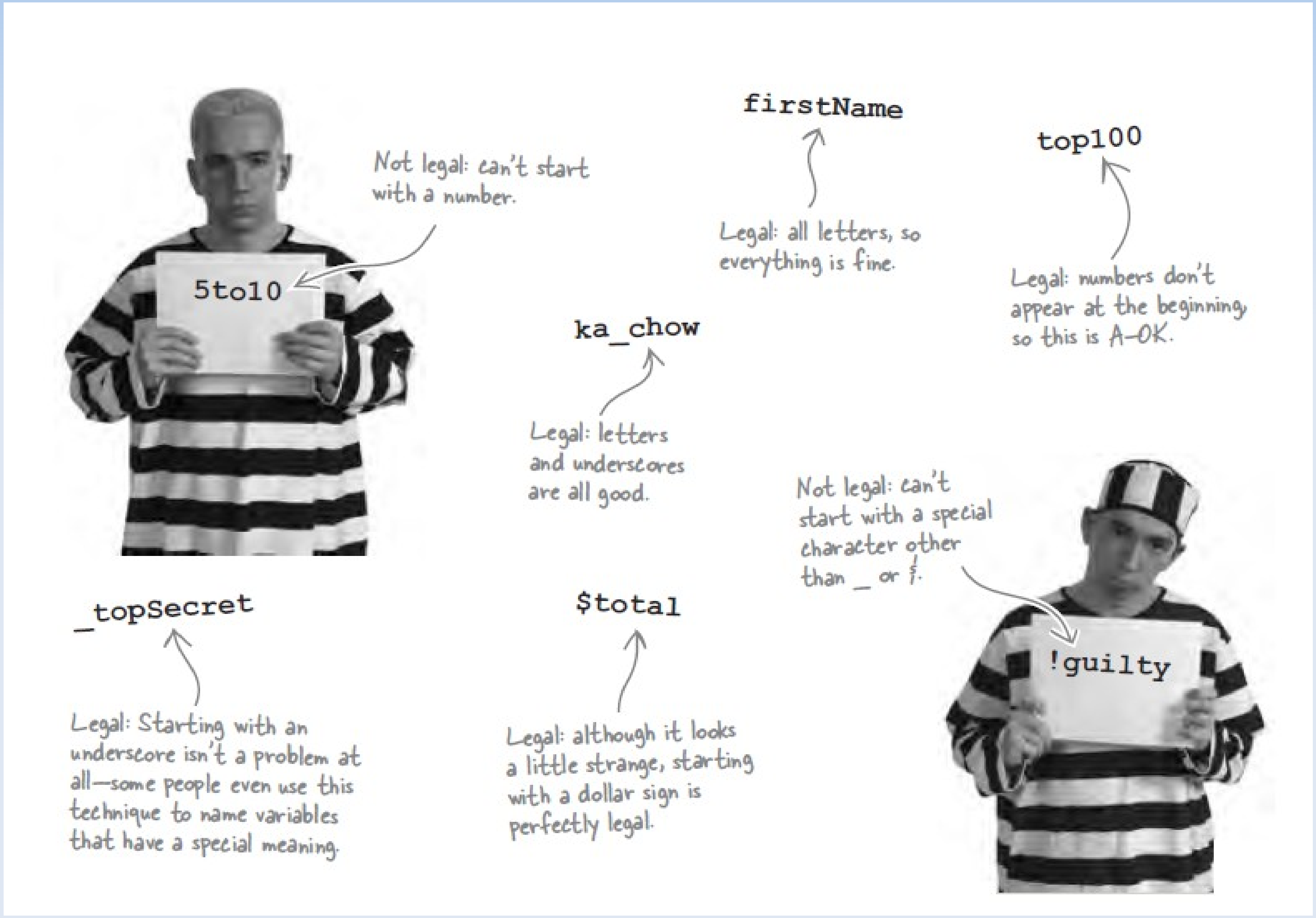
An identifier must be at least one character in length.

The first character in an identifier must be a letter, an underscore (_), or a dollar sign (**$**).

Each character after the first character can be a letter, an underscore (_), a dollar sign (**$**), or a number.

Spaces and special characters other than _ and **$** are not allowed in any part of an identifier.

Esempi



5to10

Not legal: can't start with a number.

firstName

Legal: all letters, so everything is fine.

top100

Legal: numbers don't appear at the beginning, so this is A-OK.

ka_chow

Legal: letters and underscores are all good.

!guilty

Not legal: can't start with a special character other than _ or $.

_topSecret

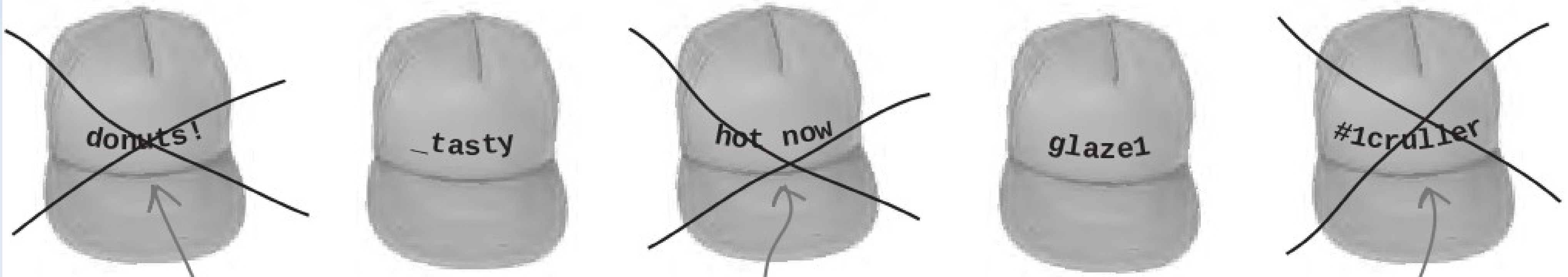
Legal: Starting with an underscore isn't a problem at all—some people even use this technique to name variables that have a special meaning.

$total

Legal: although it looks a little strange, starting with a dollar sign is perfectly legal.

Exercise Solution

Your job was to mark an X over the caps that have variable names that won't cut it in JavaScript.



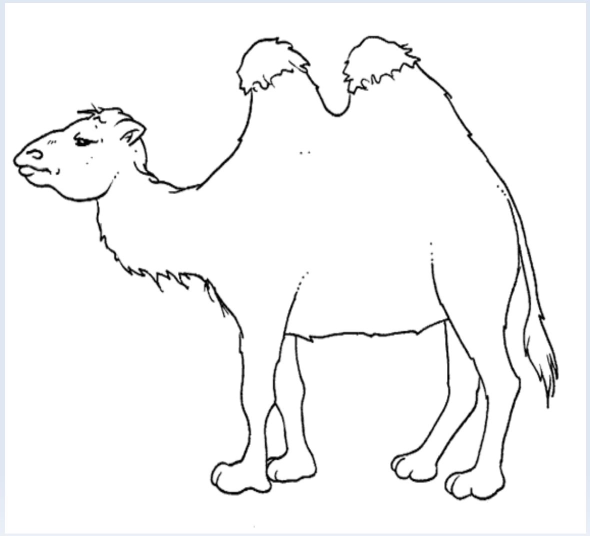
Exclamation points aren't allowed anywhere in an identifier.

Sorry, spaces aren't allowed either.

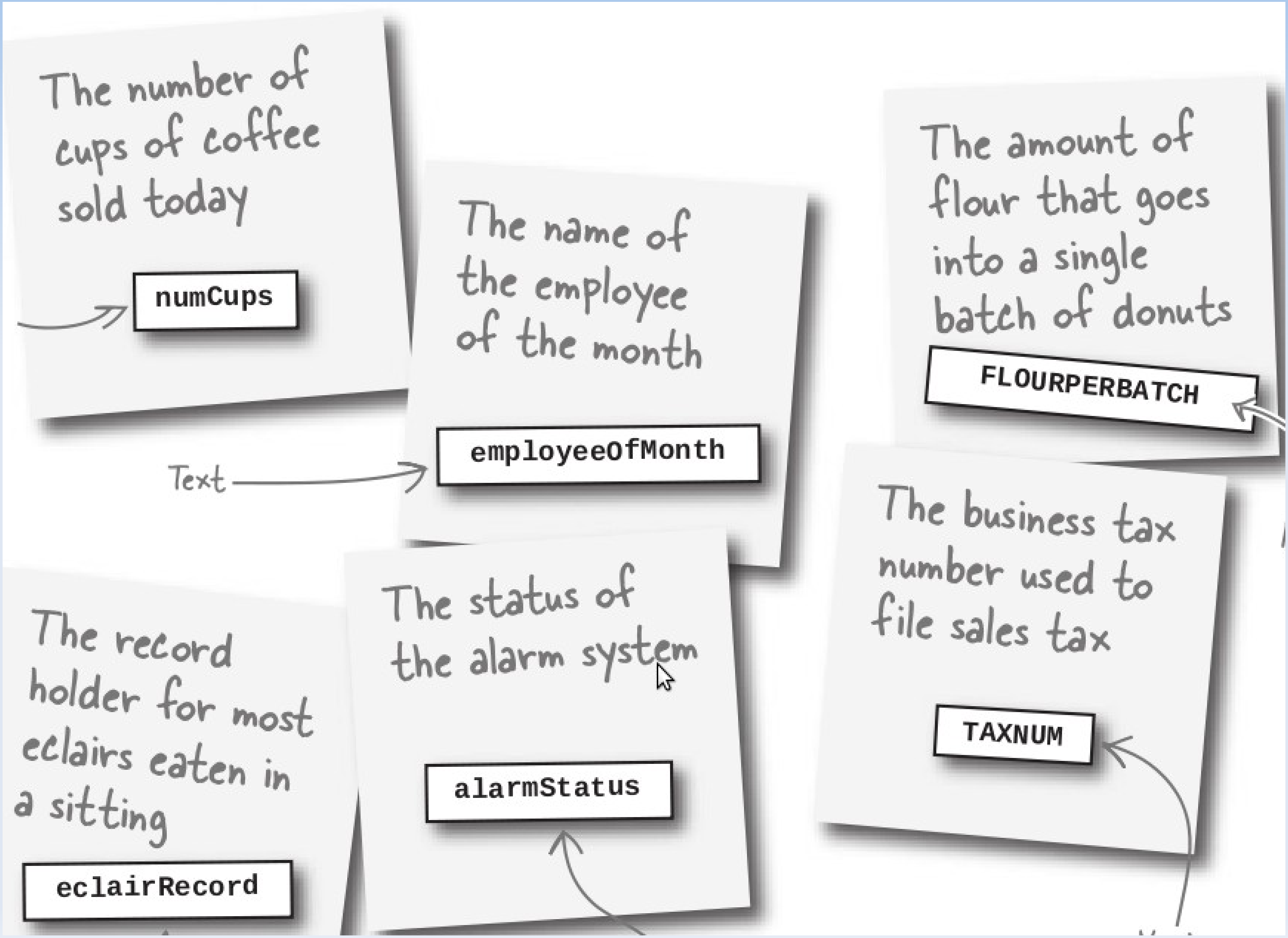
The pound symbol is only going to invoke the wrath of Sheriff Justice.

Convenzione “camelCase”

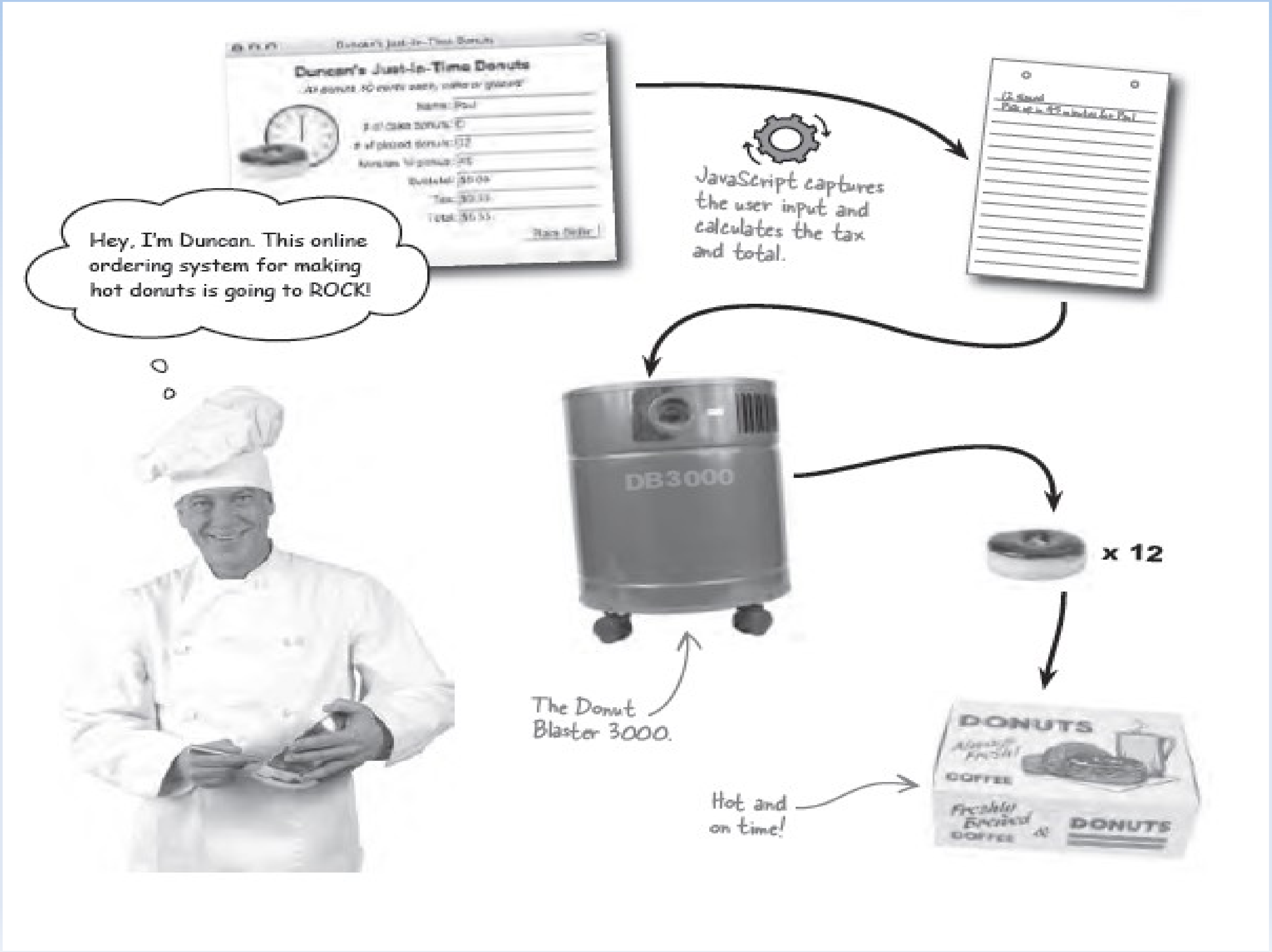
La prima lettera di ogni parola, eccetto quella della prima parola, è maiuscola



Esempi


The number of cups of coffee sold today
numCups
Text
The name of the employee of the month
employeeOfMonth
The amount of flour that goes into a single batch of donuts
FLOURPERBATCH
The business tax number used to file sales tax
TAXNUM
The record holder for most eclairs eaten in a sitting
eclairRecord
The status of the alarm system
alarmStatus

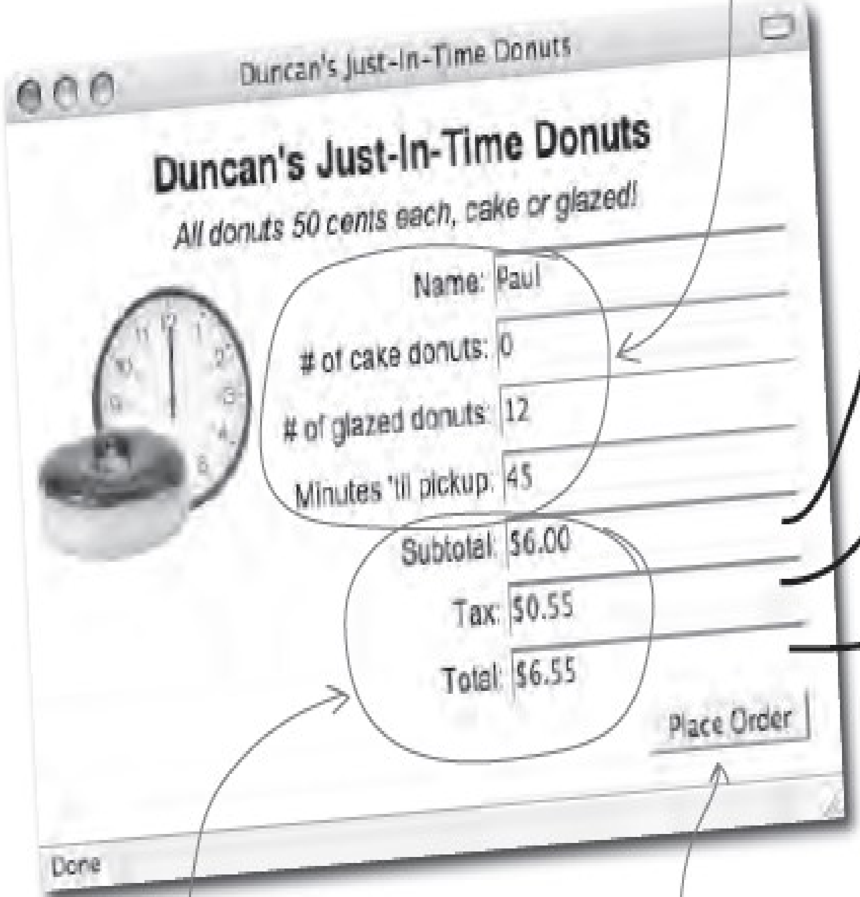
The next big thing (in donuts)


Duncan's Just-In-Time Donuts
Name: Paul
Subtotal:
Tax:
Total:
Place Order
Hey, I'm Duncan. This online ordering system for making hot donuts is going to ROCK!
JavaScript captures the user input and calculates the tax and total.
DB3000
The Donut Blaster 3000.
x 12
Hot and on time!
DONUTS
COFFEE
DONUTS

Progettiamo uno script che...

- Permette inserimento dei dati nei campi
- Calcola i totali parziali
- Ammette un Pulsante per confermare l'ordine

This information is required for the order, and so it should be validated by JavaScript.



Duncan's Just-In-Time Donuts

Duncan's Just-In-Time Donuts

All donuts 50 cents each, cake or glazed!

Name:	Paul
# of cake donuts:	0
# of glazed donuts:	12
Minutes 'til pickup:	45
Subtotal:	$6.00
Tax:	$0.55
Total:	$6.55

This information is calculated on the fly using JavaScript.

JavaScript isn't required for the final form submission to the web server.

The subtotal is calculated by multiplying the total number of donuts by the price per donut:

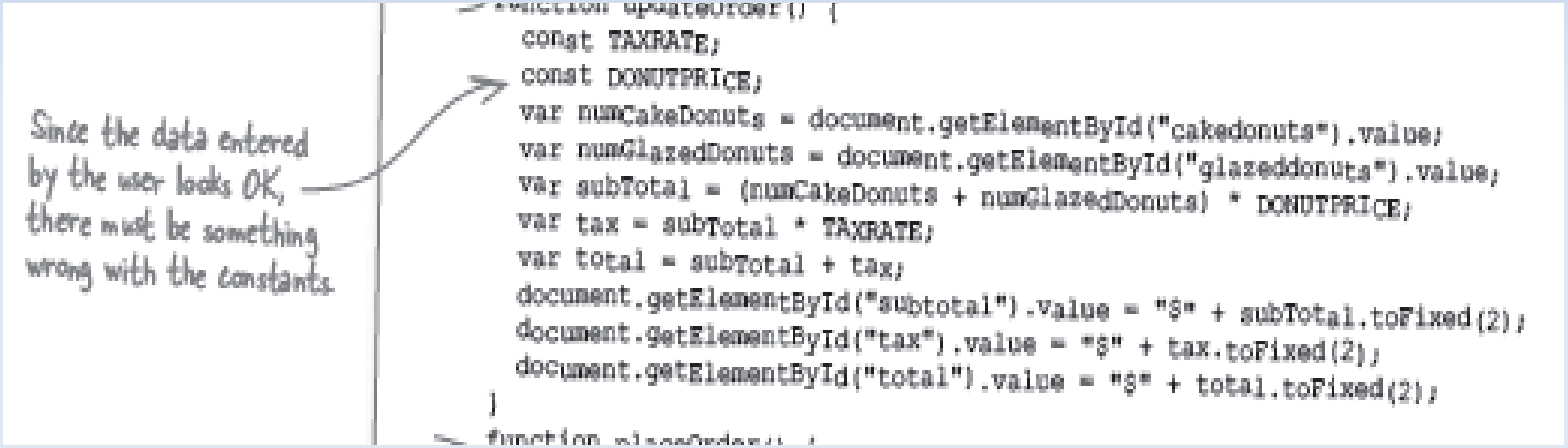
(# of cake donuts + # of glazed donuts) x price per donut

The tax is calculated by multiplying the subtotal by the tax rate:

subtotal x tax rate

The order total is calculated by adding the subtotal and the tax:

subtotal + tax



Since the data entered by the user looks OK, there must be something wrong with the constants.

```
function updateOrder() {
  const TAXRATE;
  const DONUTPRICE;
  var numCakeDonuts = document.getElementById("cakedonuts").value;
  var numGlazedDonuts = document.getElementById("glazeddonuts").value;
  var subTotal = (numCakeDonuts + numGlazedDonuts) * DONUTPRICE;
  var tax = subTotal * TAXRATE;
  var total = subTotal + tax;
  document.getElementById("subtotal").value = "$" + subTotal.toFixed(2);
  document.getElementById("tax").value = "$" + tax.toFixed(2);
  document.getElementById("total").value = "$" + total.toFixed(2);
}
function placeOrder() {
```

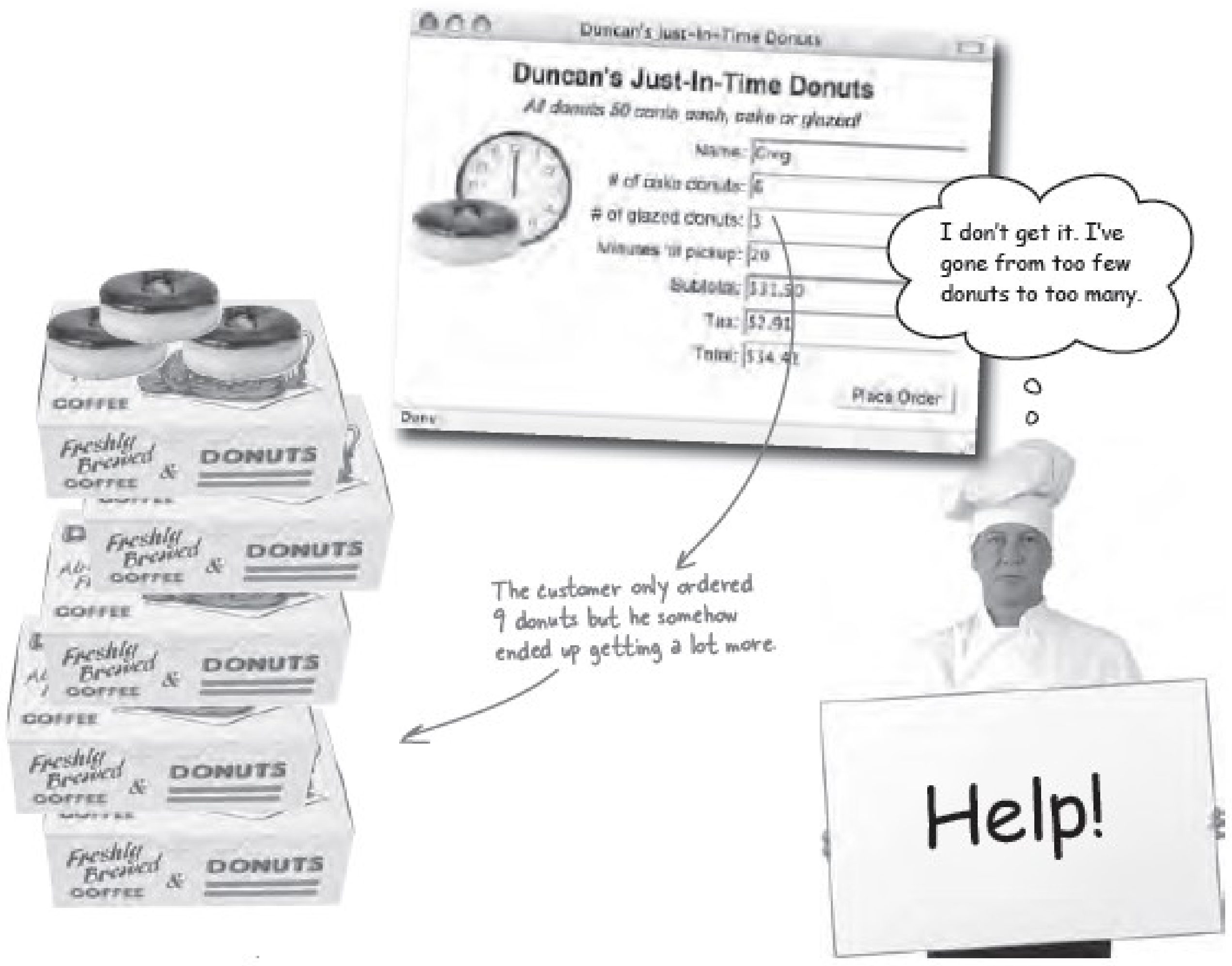
Le costanti devono essere inizializzate

const DONUTPRICE;

La costante è definita ma non contiene alcun valore !!!

NaN = Not a Number

Troppi soldi per poche ciambelle



Duncan's Just-In-Time Donuts

Duncan's Just-In-Time Donuts

All donuts 50 cents each, cake or glazed!

Name:	Greg
# of cake donuts:	6
# of glazed donuts:	3
Minutes 'til pickup:	20
Subtotal:	$31.50
Tax:	$2.91
Total:	$34.41

Place Order
Done
I don't get it. I've gone from too few donuts to too many.
The customer only ordered 9 donuts but he somehow ended up getting a lot more.
Help!
Freshly Brewed COFFEE & DONUTS

Quando riempiamo i campi inseriamo delle STRINGHE

1 + 2 =3

“a”+”b”=”ab”

“6” + “3” = “63”

Conversione dei dati

parseInt : da testo a intero

parseFloat: da testo a float

Esempi

parseInt(“1”)==1

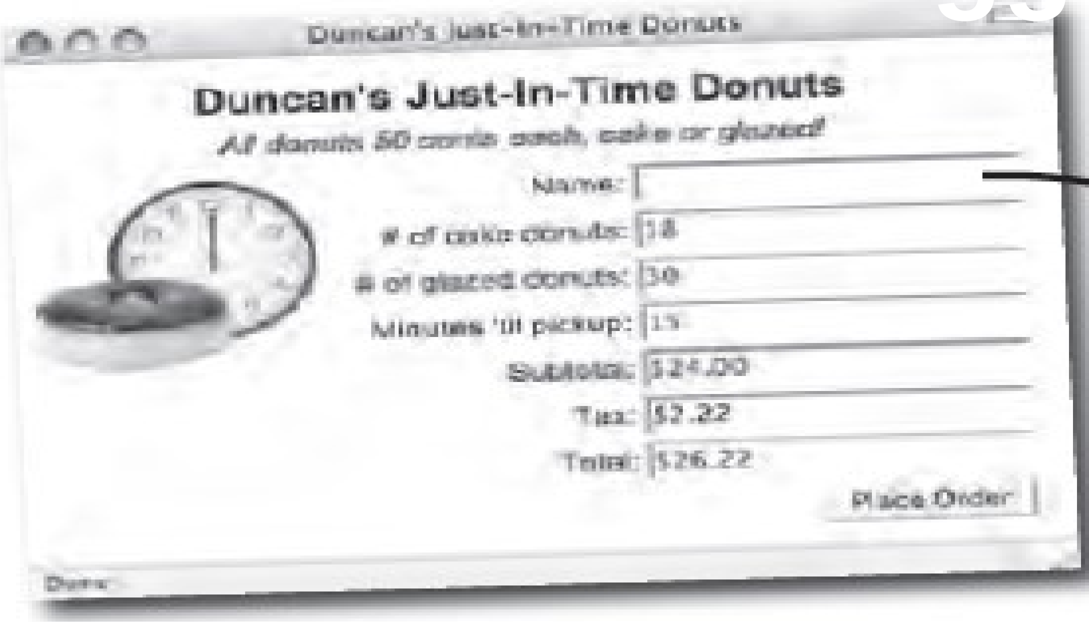
ParseFloat(“1.4”)==1.4

parseFloat("$31.50") = NaN

Risolviamo il problema

```
parseInt(document.getElementById(“cakedonuts”).value);
```

```
parseInt(document.getElementById(“cakedonuts”).value);
```


Duncan's Just-In-Time Donuts

Duncan's Just-In-Time Donuts

All donuts 50 cents each, cake or glazed!

Name:

# of cake donuts: 18

# of glazed donuts: 30

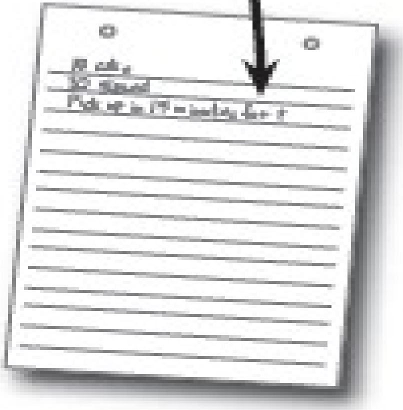
Minutes 'til pickup: 15

Subtotal: $24.00

Tax: $2.22

Total: $26.22

Even though no name has been entered, the order is still accepted.



I'm not worried about my competitors, I just need to make the donut code smarter about how it accepts data.

Alcune funzioni utili

```
document.getElementById("pickupminutes").value;
```

Prende i dati inseriti nel campo “value” del form denominato “pickupminutes”

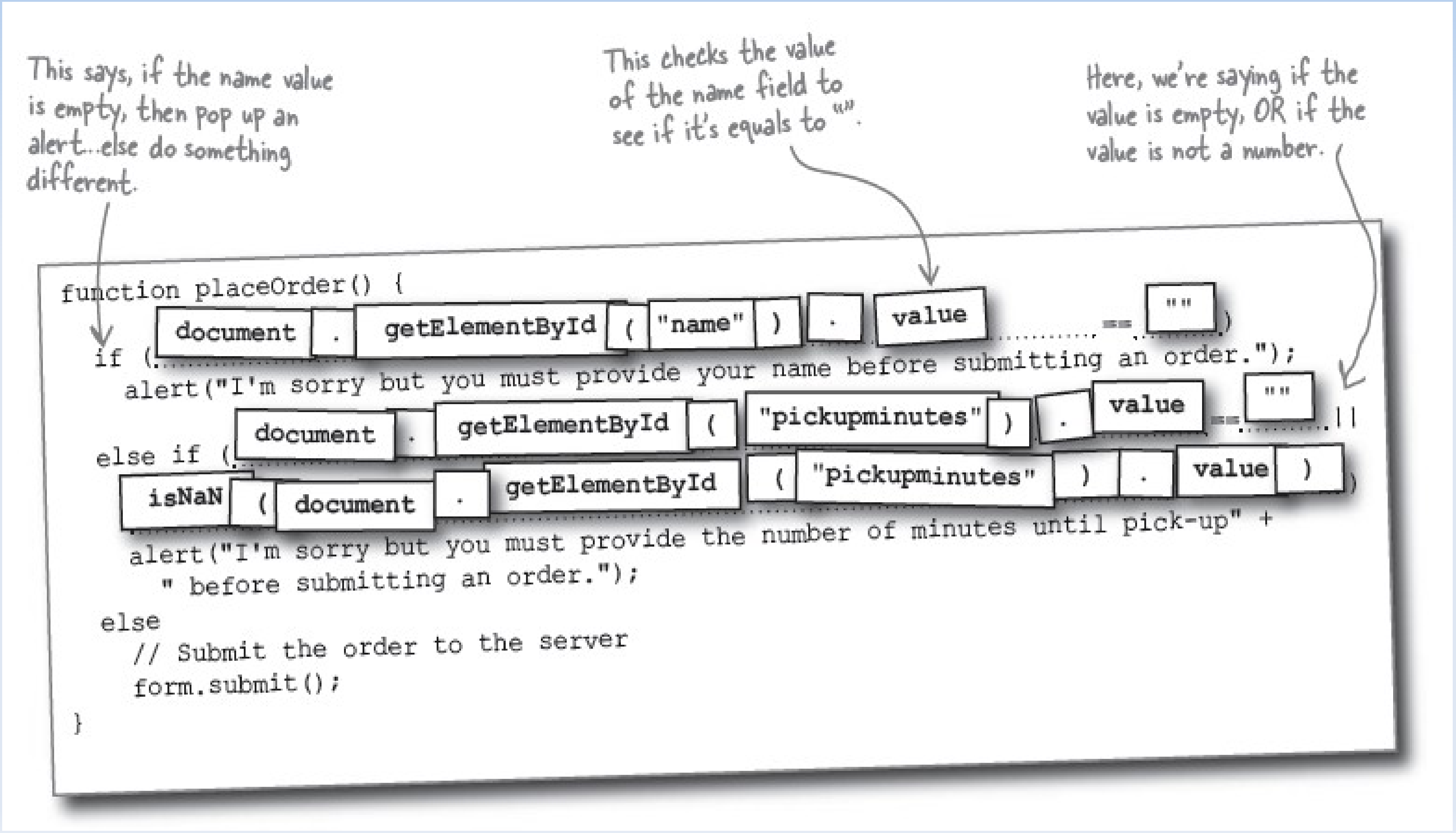
IsNan();

Restituisce “vero” se l'argmento non è un numero, “falso” se lo è

Esempio:

```
isNaN(document.getElementById("pickupminutes").value);
```

Problema Risolto

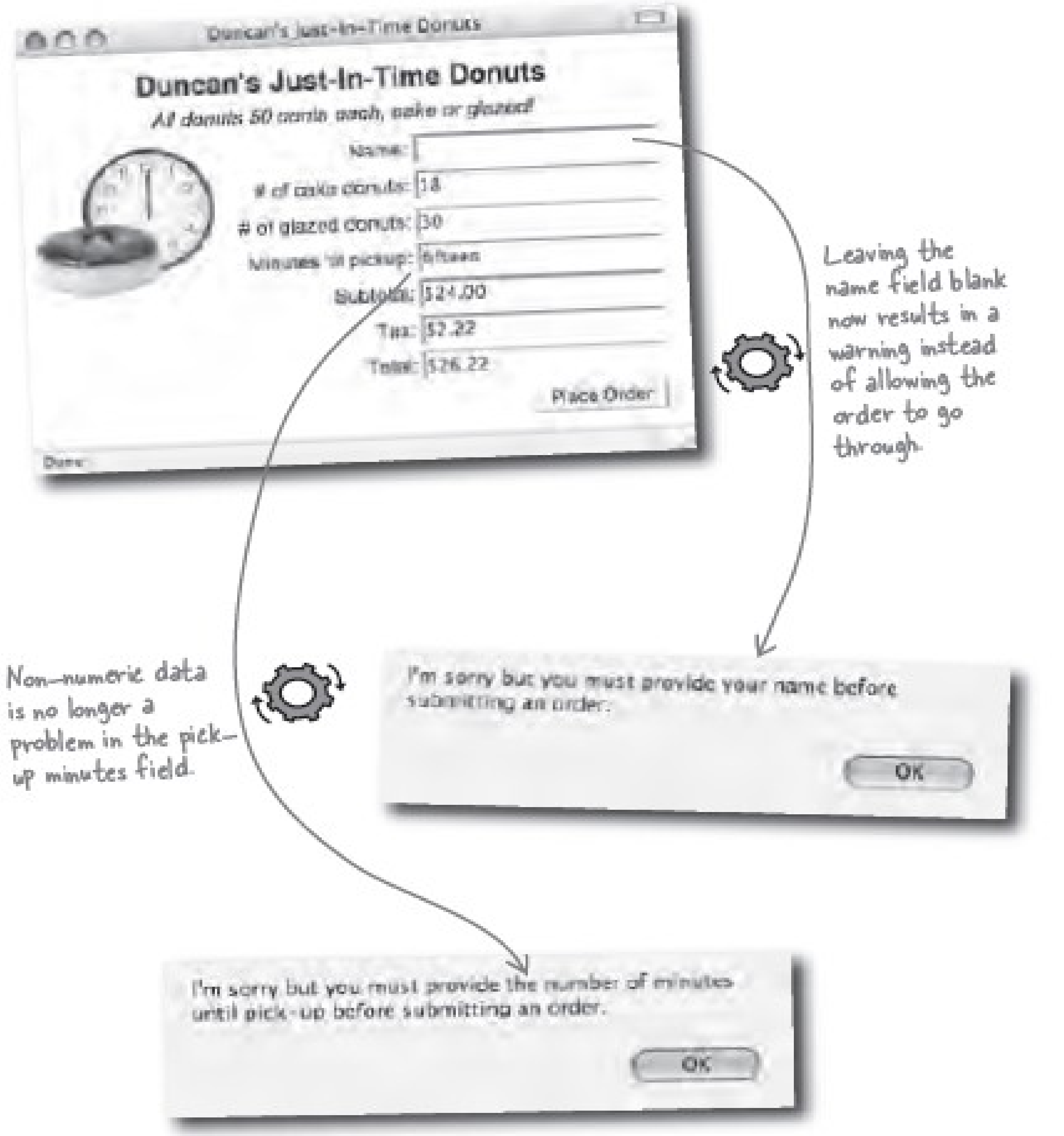


This says, if the name value is empty, then pop up an alert...else do something different.

This checks the value of the name field to see if it's equals to "".

Here, we're saying if the value is empty, OR if the value is not a number.

```
function placeOrder() {
  if (document.getElementById("name").value == "")
    alert("I'm sorry but you must provide your name before submitting an order.");
  else if (document.getElementById("pickupminutes").value == "" ||
  isNaN(document.getElementById("Pickupminutes").value))
    alert("I'm sorry but you must provide the number of minutes until pick-up" +
      " before submitting an order.");
  else
    // Submit the order to the server
    form.submit();
}
```



Duncan's Just-In-Time Donuts

Duncan's Just-In-Time Donuts

All donuts 50 cents each, cake or glazed!

Name:	
# of cake donuts:	18
# of glazed donuts:	30
Minutes 'til pickup:	fifteen
Subtotal:	$24.00
Tax:	$2.22
Total:	$26.22

Place Order

Done

Leaving the name field blank now results in a warning instead of allowing the order to go through.

I'm sorry but you must provide your name before submitting an order.

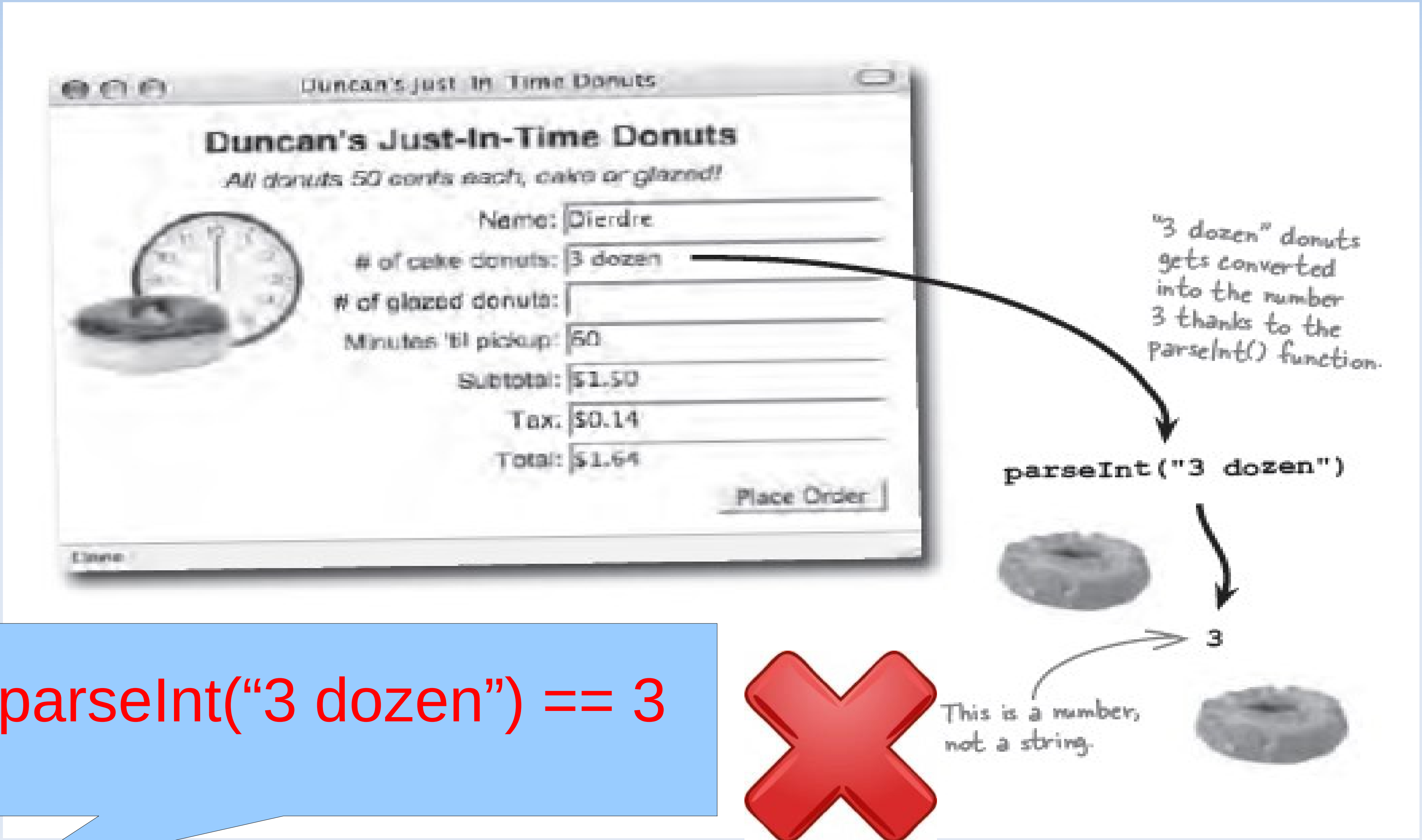
OK

Non-numeric data is no longer a problem in the pick-up minutes field.

I'm sorry but you must provide the number of minutes until pick-up before submitting an order.

OK

Inserimento intuitivo



Duncan's Just-In-Time Donuts

All donuts 50 cents each, cake or glazed!

Name:	Dierdre
# of cake donuts:	3 dozen
# of glazed donuts:	
Minutes 'til pickup:	60
Subtotal:	$1.50
Tax:	$0.14
Total:	$1.64

Duncan's Just In Time Donuts
Place Order
Done
"3 dozen" donuts gets converted into the number 3 thanks to the parseInt() function.
parseInt("3 dozen")
3
This is a number, not a string.

parseInt("3 dozen") == 3

```
function parseDonuts(donutString) {
  numDonuts = parseInt(donutString);
  if (donutString.indexOf("dozen") != -1)
    numDonuts *= 12;
  return numDonuts;
```

Check to see if the word "dozen" appears in the input data.

Multiply the number of donuts by 12

Initialize the two constants.

Get the number of donuts from the form field

```
function updateOrder() {
  const TAXRATE = 0.0925;
  const DONUTPRICE = 0.50;
  var numCakeDonuts = parseDonuts(document.getElementById("cakedonuts").value);
  var numGlazedDonuts = ParseDonuts(document.getElementById("glazeddonuts").value);
  if (isNaN(numCakeDonuts))
    numCakeDonuts = 0;
  if (isNaN(numGlazedDonuts))
    numGlazedDonuts = 0;
  var subTotal = (numCakeDonuts + numGlazedDonuts) * DONUTPRICE;
  var tax = subTotal * TAXRATE;
  var total = subTotal + tax;
  document.getElementById("subtotal").value = "$" + subTotal.toFixed(2);
  document.getElementById("tax").value = "$" + tax.toFixed(2);
  document.getElementById("total").value = "$" + total.toFixed(2);
}
```

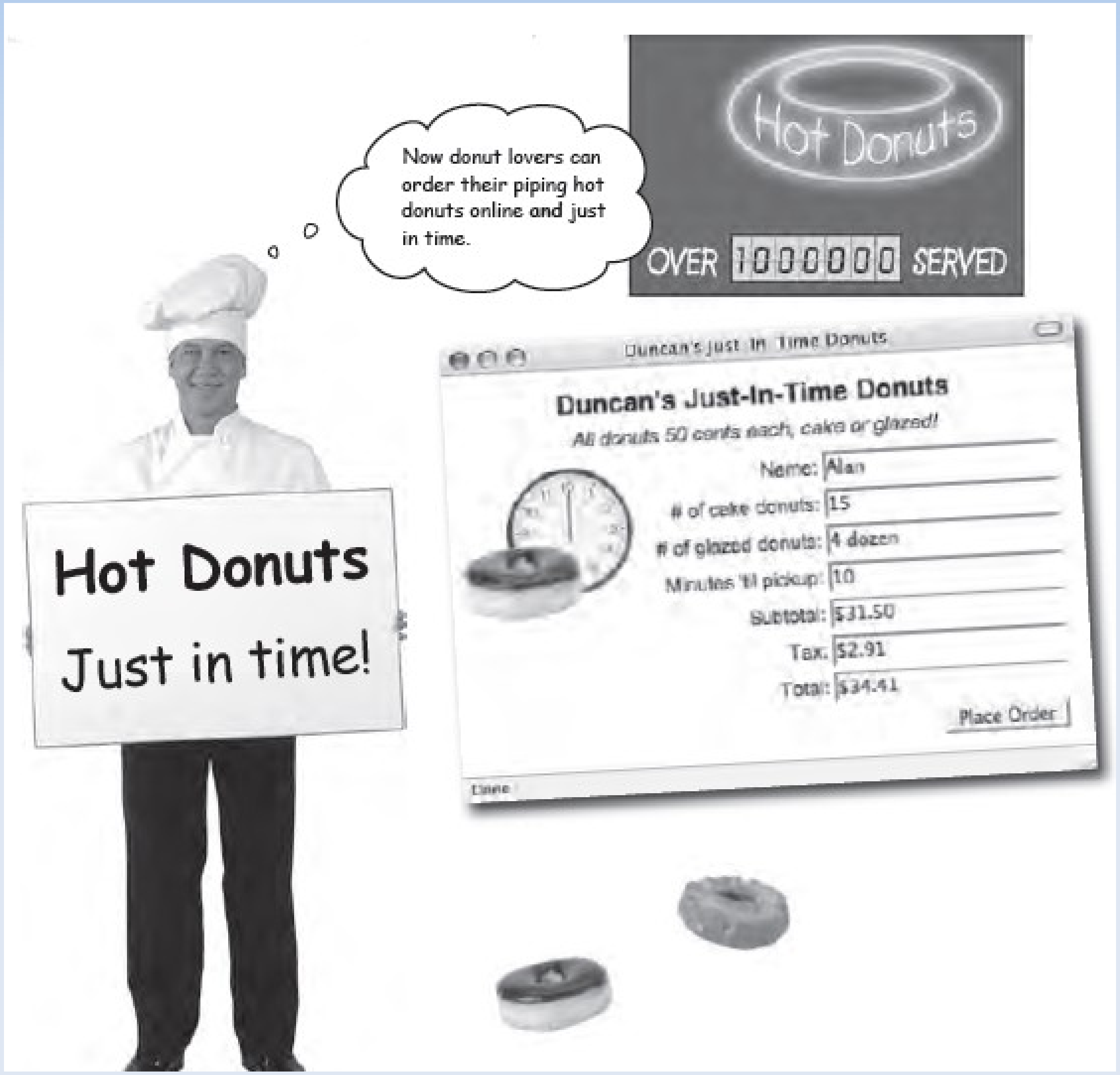
If the number of donuts entered is not a number, set them to 0.

Calculate the subtotal, tax, and total.

Show the dollar amounts on the page.

Round the dollar amounts to two decimal places (cents).

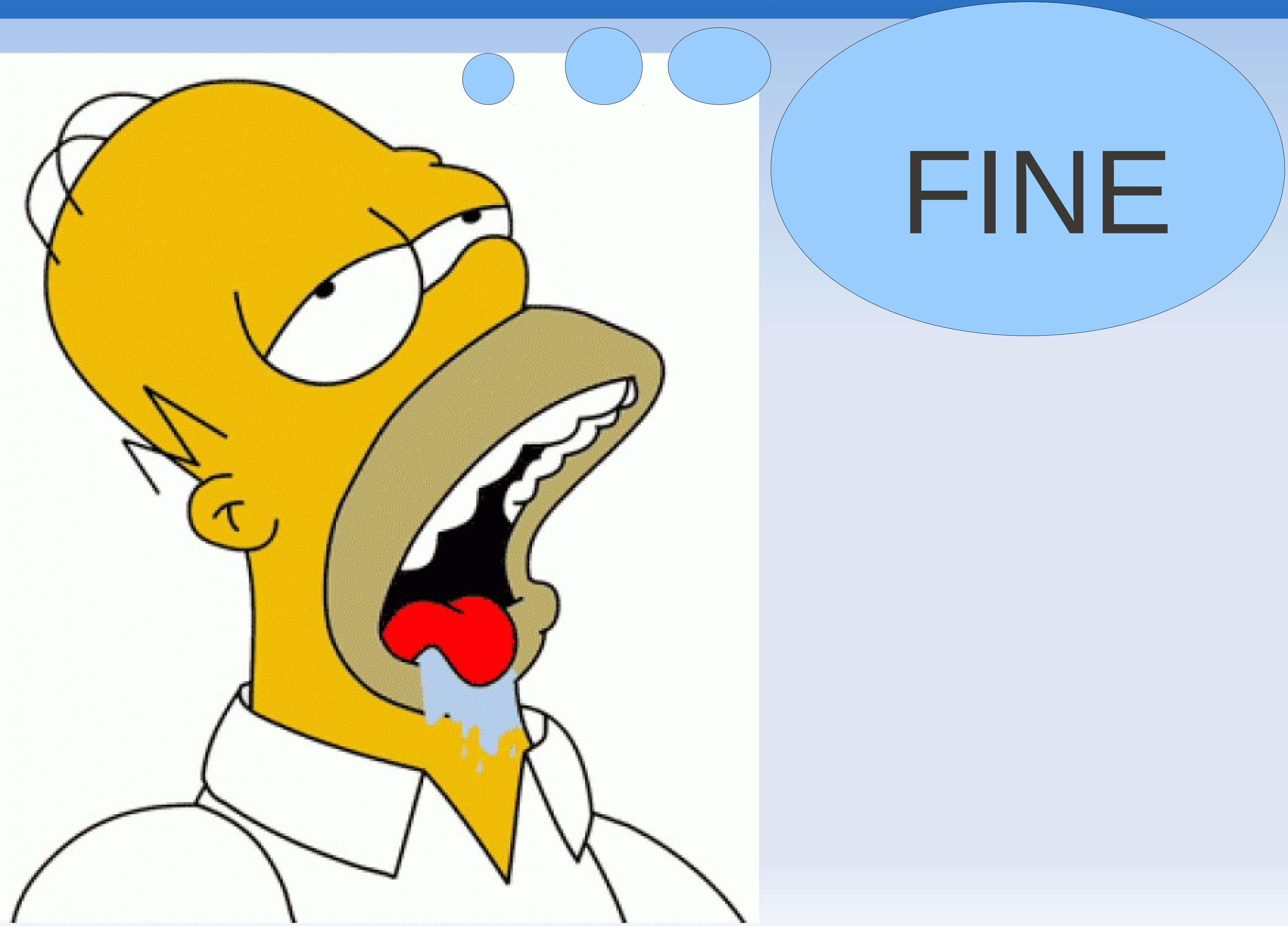
Funziona !!!


Now donut lovers can order their piping hot donuts online and just in time.
Hot Donuts
OVER 1000000 SERVED
Hot Donuts Just in time!
Duncan's Just In Time Donuts
Place Order
Done

Duncan's Just-In-Time Donuts

All donuts 50 cents each, cake or glazed!

Name:	Alan
# of cake donuts:	15
# of glazed donuts:	4 dozen
Minutes 'til pickup:	10
Subtotal:	$31.50
Tax:	$2.91
Total:	$34.41


FINE