The Guess-My-Number Game [1]

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In this game, you pick a number from 1 to 100, and the computer has to guess it.

Outline

```
⟨src/guess.lisp 1⟩≡
  ⟨(Re)set the global state 2⟩

  ⟨Define the guess-my-number function 3⟩

  ⟨Define the smaller function 6⟩

  ⟨Define the bigger function 9⟩

  ⟨Define the start-over function 12⟩
```

Root chunk (not used in this document).

Defining the Small and Big Variables

Use earmuffs.

```
⟨(Re)set the global state 2⟩≡
  (defparameter *small* 1)
  (defparameter *big* 100)
```

This code is used in chunks 1 and 12.

Defining the Guess-My-Number Function

```
⟨Define the guess-my-number function 3⟩≡
  (defun guess-my-number ()
    ⟨Halve the sum of the limits and shorten the result 4⟩)
```

This code is used in chunk 1.

```
⟨Halve the sum of the limits and shorten the result 4⟩≡
  (ash (+ *small* *big*) -1)
```

This code is used in chunk 3.

```
⟨Have the computer guess a number 5⟩≡
  (guess-my-number)
```

This code is used in chunks 6, 8, 9, 11, and 12.

[1] From Chapter 2 of *Land of Lisp*.

[2] Last updated October 8, 2017

Defining the Smaller and Bigger Functions

⟨*Define the* `smaller` *function* 6⟩≡

```
(defun smaller ()
  ⟨Set *big* to one less than the last guess 7⟩
  ⟨Have the computer guess a number 5⟩)
```

This code is used in chunk 1.

⟨*Set *big* to one less than the last guess* 7⟩≡

```
(setf *big* ⟨Subtract one from the most recent guess 8⟩)
```

This code is used in chunk 6.

⟨*Subtract one from the most recent guess* 8⟩≡

```
(1- ⟨Have the computer guess a number 5⟩)
```

This code is used in chunk 7.

⟨*Define the* `bigger` *function* 9⟩≡

```
(defun bigger ()
  ⟨Set *small* to one greater than the last guess 10⟩
  ⟨Have the computer guess a number 5⟩)
```

This code is used in chunk 1.

⟨*Set *small* to one greater than the last guess* 10⟩≡

```
(setq *small* ⟨Add one to the most recent guess 11⟩)
```

This code is used in chunk 9.

⟨*Add one to the most recent guess* 11⟩≡

```
(1+ ⟨Have the computer guess a number 5⟩)
```

This code is used in chunk 10.

Defining the Start-Over Function

⟨*Define the* `start-over` *function* 12⟩≡

```
(defun start-over ()
  ⟨(Re)set the global state 2⟩
  ⟨Have the computer guess a number 5⟩)
```

This code is used in chunk 1.

Example Session

```
$ rlwrap sbcl --load src/guess.lisp
```

```
> (start-over)
50
> (smaller)
25
> (bigger)
37
> (bigger)
43
> (smaller)
40
> (bigger)
41
> (bigger)
42
```

Chunks

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