#### Information Infrastructure II

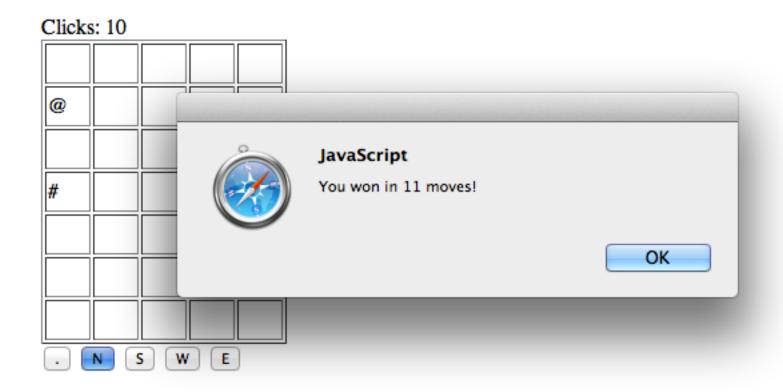
Lecture 23 - 2014.04.16 & 2014.04.17

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# a Javascript + HTML game: "runner" against "chaser"

#### game objective:

move the "chaser" until you catch the "runner"



# implementing a playing field: its view

the game playing field will look like this:

- a table with H (height) rows and W (width) columns
- how to specify the size of each table row/column in HTML:

```
          width="30">
```

### implementing a playing field: its model

- the content of a table can be stored in a 2D array in Javascript.
  - Does Javascript have 2D arrays?
- not quite... but we canbuild

an array of arrays

then instantiate
 our "2D" array
 with a function call

```
function MyArray2D (pWidth, pHeight) {
  var lArray = new Array(pWidth);
  for (var j=0; j < pWidth; j++) {
    lArray[j] = new Array(pHeight);
  }
  return lArray;
}</pre>
var myArray = MyArray2D(2, 2)
```

#### implementing a playing field: its model

- the content of an HTML table stored in a 2D array
- can then be initialized like this:

```
for (var j = 0; j < 7; j = j + 1) {
    for (var i = 0; i < 5; i++) {
        myArray[i][j] = 0;
    }
}</pre>
```

## playing field: what are its dimensions?

- find out an HTML table's dimensions from Javascript:
  - theTable.rows = all rows in an HTML table
  - theTable.rows.lenght = how many rows?
  - theTable.rows[i] = the i<sup>th</sup> row in an HTML table
  - theTable.rows[i].cells = all cells in a row
  - theTable.rows[i].cells.length = how many cells in this row?
  - theTable.rows[i].cells[j] = the j<sup>th</sup> cell in the i<sup>th</sup> row

```
var lTable = document.getElementById("playfield");
var lTableHeight = lTable.rows.length;
var lTableWidth = 0;

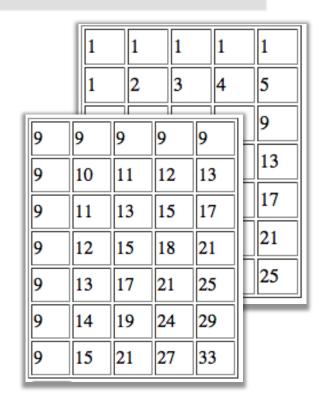
for (var j = 0; j < lTableHeight; j = j + 1) {
    lTableWidth = lTable.rows[j].cells.length;
}</pre>
```

## group task 1

- download
   I2 I I-lecture-23-task-I-starting-text.html
   from Oncourse→Resources→SampleCode
- modify the run() function so that it displays the number of clicks from any of the 5 buttons as text in the HTML page
- the initial "Clicks: 0." text needs to be updated every time one of the 5 buttons is clicked, to show: "Clicks: 1.", "Clicks: 2.", "Clicks: 3.", etc.

# group task 2

- (continue working on the file
   I211-lecture-23-task-1-starting-text.html
   from Oncourse Resources SampleCode)
- I. modify the element to always display 30x30-pixel cells
- 2. modify the run() function to display in each cell of the table the value (i\*j)+k, where:



- k = number of clicks on any of buttons
- i and j = coordinates of the table cell hint: use a Javascript array to keep track of each cell's value