CS105
week 15/16 handout

objects, DOM

Notes

Activity 12 Answers

decimal to binary

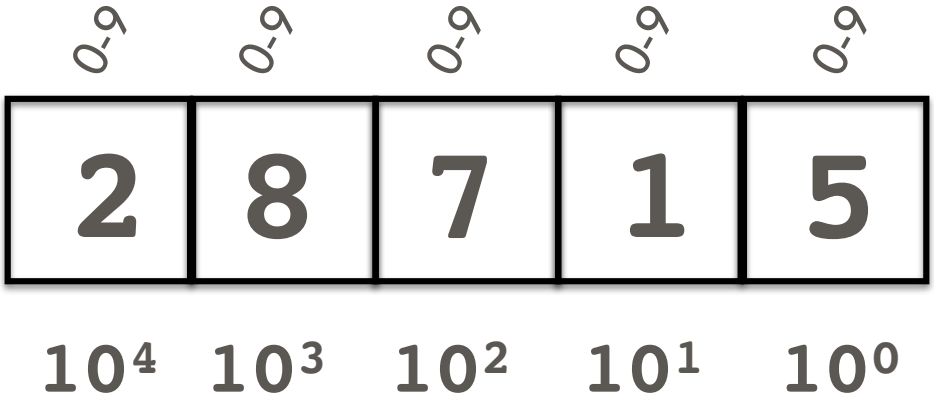
```
 5: 0000101
18: 0010010
24: 0011000
72: 1001000
```

binary to decimal

```
100100: 36
011101: 29
101100: 44
101010: 42
```

DECIMAL

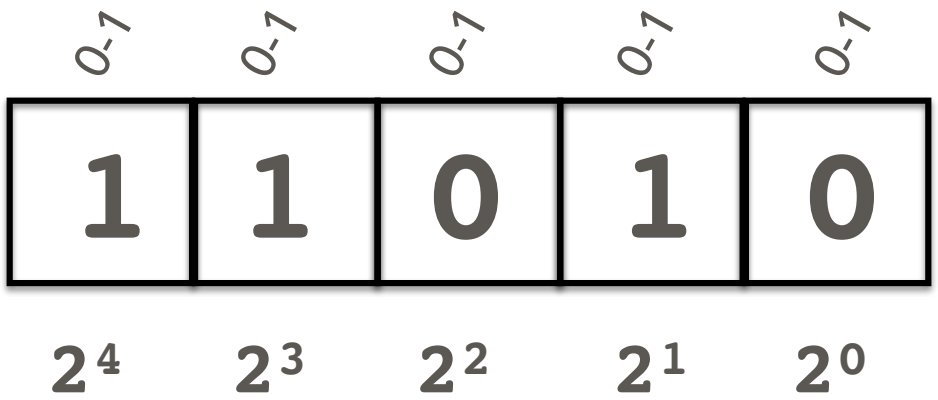
base 10 (10 digits 0-9)




```
20000 (2 * 10000) +
 8000 (8 *  1000) +
  700 (7 *   100) +
   10 (1 *    10) +
    5 (5 *     1)
-------------------
28715
```

BINARY

base 2 (2 digits 0-1)




```
16  (1  *  16)  +
 8  (1  *   8)  +
 0  (0  *   4)  +
 2  (1  *   2)  +
 0  (0  *   1)
————————————————
26
```

Swap items

```
var items = [42, 23, 10];
// how to swap items[0] with items[1]?
// after: [23, 42, 10];
// write the JavaScript code
```

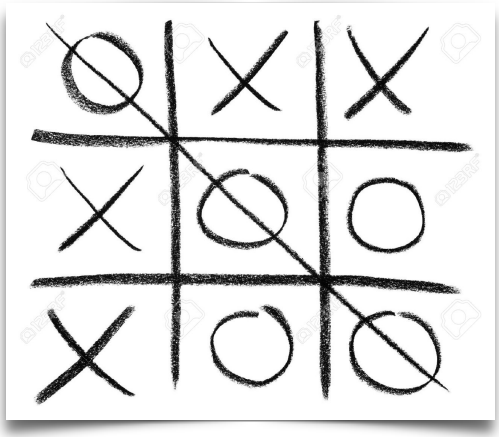
JavaScript Objects

```
var suits = "♠♡♢♣";

var spade   = suits[0];
var heart   = suits[1];
var diamond = suits[2];
var club    = suits[3];

// how to represent a deck
// of 52 playing cards?
// how to access the fist card's rank in a deck?
```

modeling 'tic-tac-toe'



```
var slot = {
  glyph:      undefined, // 'X', 'O'
  moveNumber: -1,        // when occupied
  isEmpty: function() { // wow a function
     return typeof(this.glyph) === 'undefined';
  }
}

var board = [];
for (var row = 0; row < 3; row++) {
  var row = [];
  for (var col = 0; col < 3; col++) {
     row.push({ moveNumber:0 });
  }
  board.push(row);
}

// how would you describe board ?
```

DOM

```
<body>
 <div id="content">
  <h1>Heading here</h1>
  <p>Lorem ipsum dolor sit amet.</p>
  <p>Lorem ipsum
  <em>sit</em> amet.</p>
  <hr>
 </div>
 <div id="nav">
  <ul>
    <li>item 1</li>
    <li>item 2</li>
    <li>item 3</li>
  </ul>
 </div>
</body>
```