javascript review

Loops

```
1 ▾  for (var i = 1; i < 6; i = i + 1) {
2        print( i );
3    }
```

Exercise: loops and arrays

Go to DSA lecture notes 1 and do "Exercise: loops and arrays"

```
1  var values = [181, 177, 738, 592, 411, 261, 179, 200, 185, 212];
```

```
1  var values = [181, 177, 738, 592, 411, 261, 179, 200, 185, 212];
2
3  for(var i = values.length - 1; i >= 0; i--) {
4    print(values[i]);
5  }
```

Objects

```
1   // create new empty objects for theDonald and hillary
2   var theDonald = {};
3   var hillary = {};
4
5   theDonald.party = "Republican";
6   theDonald.hairColor = "orange";
7   theDonald.age = 69;
8
9   hillary.party = "Democrat";
10  hillary.hairColor = "blonde";
11  hillary.age = 68;
12
13  print( JSON.stringify(theDonald) );
```

Exercise: objects

```
1  var company = {};
2  company.symbol = 'AAPL';
3  company.cap = 738.1;
```

```
1  var company = {};
2  company.symbol = 'AAPL';
3  company.cap = 738.1;
4
5  print(company.symbol + ":  " + company.cap);
```

if-statements

```
1  var temperature = 64;
2
3  if (temperature < 32) {
4    print("It's freezing.");
5  } else if (temperature < 50) {
6    print("It's a bit chilly");
7  } else if (temperature < 80) {
8    print("It's nice out.");
9  } else {
10   print("Let's go to the beach!");
11 }
```

It's nice out.

Exercise: if-statements

Write an if-statement that tests if the company has a capitalization greater than $300 billion. If so, print 'big'; otherwise, print 'not so big'.

```
1  var company = {};
2  company.symbol = 'AAPL';
3  company.cap = '738.1';
```

```
1  var company = {};
2  company.symbol = 'AAPL';
3  company.cap = '738.1';
4
5  if(company.cap > 300) {
6      print("big");
7  } else {
8      print("not so big");
9  }
```

big

Dictionaries (new)

```
1  var grades= {};
2  grades["Kyle Balkcom"] = 94;
3  grades["Joe French"] = 84;
4  grades["Sally Smith"] = 96;
5
6  print(grades["Kyle Balkcom"]);
```

94

Objects are dictionaries

```
1  var company = {};
2  company['symbol'] = 'AAPL';
3  company['cap'] = 738.1;
4
5  print(company.symbol + company.cap);
```

Exercise: arrays of objects

Below is some code that creates an array of company objects. Write a function `printCompanies` that loops over elements of the array and prints tickers and capitalizations.

```
1   var companies = [];
2   companies.push(
3     {'symbol':'ORCL', 'cap':181.1 },
4     {'symbol':'HD', 'cap':177.1 },
5     {'symbol':'AAPL', 'cap': 738.1},
6     {'symbol':'GOOGL', 'cap': 592.2},
7     {'symbol':'FB', 'cap': 411.2},
8     {'symbol':'GE', 'cap': 261.7},
9     {'symbol':'DIS', 'cap': 179.8},
10    {'symbol':'PFE', 'cap': 200.0},
11    {'symbol':'KO', 'cap': 185.6},
12    {'symbol':'BUD', 'cap': 212.6}
13  );
14
15  var printCompanies = function(companyArray) {
16
17  };
18
19  printCompanies(companies);
```

Exercise: arrays of objects

```javascript
var companies = [];
companies.push(
  {'symbol':'ORCL', 'cap':181.1 },
  {'symbol':'HD', 'cap':177.1 },
  {'symbol':'AAPL', 'cap': 738.1},
  {'symbol':'GOOGL', 'cap': 592.2},
  {'symbol':'FB', 'cap': 411.2},
  {'symbol':'GE', 'cap': 261.7},
  {'symbol':'DIS', 'cap': 179.8},
  {'symbol':'PFE', 'cap': 200.0},
  {'symbol':'KO', 'cap': 185.6},
  {'symbol':'BUD', 'cap': 212.6}
);

var printCompanies = function(companyArray) {
  for(var i = 0; i < companyArray.length; i++) {
    print(companyArray[i].symbol + ":   " + companyArray[i].cap);
  }
};

printCompanies(companies);
```

Exercise: if-statements within loops

```
 1  var companies = [];
 2  companies.push(
 3    {'symbol':'ORCL', 'cap':181.1 },
 4    {'symbol':'HD', 'cap':177.1 },
 5    {'symbol':'AAPL', 'cap': 738.1},
 6    {'symbol':'GOOGL', 'cap': 592.2},
 7    {'symbol':'FB', 'cap': 411.2},
 8    {'symbol':'GE', 'cap': 261.7},
 9    {'symbol':'DIS', 'cap': 179.8},
10    {'symbol':'PFE', 'cap': 200.0},
11    {'symbol':'KO', 'cap': 185.6},
12    {'symbol':'BUD', 'cap': 212.6}
13  );
14
15  var printBig = function(companyArray) {
16
17  };
18
19  printBig(companies);
```

Exercise: if-statements within loops

```javascript
15   var printBig = function(companyArray) {
16       for(var i = 0; i < companyArray.length; i++) {
17         if(companyArray[i].cap > 300) {
18           print(companyArray[i].symbol + ":  " + companyArray[i].cap);
19         }
20       }
21   };
22
23   printBig(companies);
```

```
AAPL:  738.1
GOOGL:  592.2
FB:  411.2
```

Exercise: functions that return a value

(do at home)

A bigger example: select

As an example of how to put it all together, I wrote 'select':

```
41  print("big: ");
42  printCompanies(select(companies, isBig));
43
44  print("");
45  print("little: ");
46  printCompanies(select(companies, isLittle));
```

Work through at home in lecture notes:
how does 'select' work?