

EVIDENCE OF CODE DUPLICATION

```
// Taken from
// http://stackoverflow.com/a/14387791/837649
function copyFile(source, target, cb) {
  var cbCalled = false;

  var rd = fs.createReadStream(source);
  rd.on("error", function(err) {
    done(err);
  });
  var wr = fs.createWriteStream(target);
  wr.on("error", function(err) {
    done(err);
  });
  wr.on("close", function(ex) {
    done();
  });
  rd.pipe(wr);

  function done(err) {
    if (!cbCalled) {
      cb(err);
      cbCalled = true;
    }
  }
}

module.exports = copyFile;
```

Git Project

Same mechanism, but this adds error handling:

297

```
function copyFile(source, target, cb) {
  var cbCalled = false;

  var rd = fs.createReadStream(source);
  rd.on("error", function(err) {
    done(err);
  });
  var wr = fs.createWriteStream(target);
  wr.on("error", function(err) {
    done(err);
  });
  wr.on("close", function(ex) {
    done();
  });
  rd.pipe(wr);

  function done(err) {
    if (!cbCalled) {
      cb(err);
      cbCalled = true;
    }
  }
}
```

Referenced SO Post

SO Evolution:

1. MINOR UPDATES


- Simplified Code

FinalSO.csv3746.txt
FinalGit.csv3746.txt

✓ 12

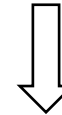
Cleanup code
[Source Link](#)

edited Aug 19 '20 at 8:54

 **Ruben Helsloot**
11k ● 5 ● 19 ● 39

```
$.fn.serializeObject = function()
{
    var o = {};
    var a = this.serializeArray();
    $.each(a, function() {
        if (o[this.name] !== undefined) {
            if (!o[this.name].push) {
                o[this.name] = [o[this.name]];
            }
            o[this.name].push(this.value || '');
        } else {
            o[this.name] = this.value || '';
        }
    });
    return o;
};
```

initial



```
function objectifyForm(formArray) {
    //serialize data function
    var returnArray = {};
    for (var i = 0; i < formArray.length; i++){
        returnArray[formArray[i]['name']] = formArray[i]['value'];
    }
    return returnArray;
}
```

final

SO Evolution:

1. MINOR UPDATES

- Simplified Code
- **Best Practice**

FinalSO.csv3785.txt

FinalGit.csv3785.txt

initial

```
function uuidv4() {  
  return 'xxxxxxxx-xxxx-4xxx-yxxx-xxxxxxxxxxxx'.replace(/[xy]/g, function(c) {  
    var r = Math.random() * 16 | 0, v = c == 'x' ? r : (r & 0x3 | 0x8);  
    return v.toString(16);  
  });  
}  
  
console.log(uuidv4());
```



final

```
function uuidv4() {  
  return ([1e7]+-1e3+-4e3+-8e3+-1e11).replace(/[018]/g, c =>  
    (c ^ crypto.getRandomValues(new Uint8Array(1))[0] & 15 >> c / 4).toString(16)  
  );  
}  
  
console.log(uuidv4());
```

▲ [Edited 2021-10-16 to reflect latest best-practices for producing RFC4122-complaint UUIDs]

4871 Most readers here will want to use [the `uuid` module](#). It is well-tested and supported.

▼ The `crypto.randomUUID()` function is an emerging standard that is supported in `Node.js` and [an](#)

SO Evolution:

1. MINOR UPDATES

- Simplified Code
- Best Practice
- Code Improvement

FinalSO.csv3984.txt

FinalGit.csv3984.txt

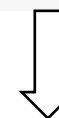
✓ 4

getTime() always uses UTC for time representation - no need to fiddle with this any further

[Source](#) [Link](#)

```
function calcTime(city, offset) {  
  
    // create Date object for current location  
    d = new Date();  
  
    // convert to msec  
    // add local time zone offset  
    // get UTC time in msec  
    utc = d.getTime() + (d.getTimezoneOffset() * 60000);  
  
    // create new Date object for different city  
    // using supplied offset  
    nd = new Date(utc + (3600000*offset));  
  
    // return time as a string  
    return "The local time in " + city + " is " + nd.toLocaleString();  
}
```

initial



```
function calcTime(city, offset) {  
  
    // create Date object for current location  
    var d = new Date();  
  
    // get UTC time in msec  
    var utc = d.getTime();  
  
    // create new Date object for different city  
    // using supplied offset  
    var nd = new Date(utc + (3600000*offset));  
  
    // return time as a string  
    return "The local time in " + city + " is " + nd.toLocaleString();  
}
```

final

SO Evolution:

1. MINOR UPDATES

- Simplified Code
- Best Practice
- Code Improvement

2. MAJOR UPDATES

- Version update

FinalSO.csv4154.txt

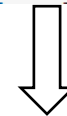
FinalGit.csv4154.txt

967

Well, this answer has become its own beast. Many new versions, it was getting stupid long. Many thanks to all of the great many contributors to this answer. But, in order to keep it simple for the masses. I archived all the versions/history of this answer's evolution to my [github](#). And started it over clean on [StackOverflow](#) here with the newest version. A special thanks goes out to [Mike 'Pomax' Kamermans](#) for this version. He gave me the new math.

initial

```
function shadeBlendConvert(p, from, to) {
  if(typeof(p)!="number"||p<-1.0||p>1.0||typeof(from)!="string"||(from[0]!
  if(!this.sbcRip)this.sbcRip=function(d){
    var l=d.length,RGB=new Object();
    if(l>9){
      d=d.split(",");
      if(d.length<3||d.length>4)return null;//ErrorCheck
      RGB[0]=i(d[0].slice(4)),RGB[1]=i(d[1]),RGB[2]=i(d[2]),RGB[3]=d[3]
    }else{
      switch(l){case 8:case 6:case 3:case 2:case 1:return null;} //Err
      if(l<6)d="#" + d[1] + d[1] + d[2] + d[2] + d[3] + d[3] + (l>4?d[4] + "" + d[4] : "")
      d=i(d.slice(1),16),RGB[0]=d>>16&255,RGB[1]=d>>8&255,RGB[2]=d&255
    }
    return RGB;}
```



final

```
const pSBC=(p,c0,c1,l)=>{
  let r,g,b,P,f,t,h,i=parseInt,m=Math.round,a=typeof(c1)=="string";
  if(typeof(p)!="number"||p<-1||p>1||typeof(c0)!="string"||(c0[0]!='r'&&c0[0]!='#')||(c1&
  if(!this.pSBCr)this.pSBCr=(d)=>{
    let n=d.length,x={};
    if(n>9){
      [r,g,b,a]=d.split(","),n=d.length;
      if(n<3||n>4)return null;
      x.r=i(r[3]=="a"?r.slice(5):r.slice(4)),x.g=i(g),x.b=i(b),x.a=a?parseFloat(a):-1
    }else{
      if(n==8||n==6||n<4)return null;
      if(n<6)d="#" + d[1] + d[1] + d[2] + d[2] + d[3] + d[3] + (n>4?d[4] + d[4] : "");
      d=i(d.slice(1),16);
      if(n==9||n==5)x.r=d>>24&255,x.g=d>>16&255,x.b=d>>8&255,x.a=m((d&255)/0.255)/100
      else x.r=d>>16,x.g=d>>8&255,x.b=d&255,x.a=-1
    }return x;}
```

SO Evolution:

1. MINOR UPDATES

- Simplified Code
- Best Practice
- Code Improvement

2. MAJOR UPDATES

- Version update
- **Deprecated method update**

FinalSO.csv3793.txt

FinalGit.csv3793.txt



490



Note: the [initEvent](#) method is now deprecated. Other answers feature up-to-date and recommended practice.

You can use [fireEvent](#) on **IE 8** or lower, and W3C's [dispatchEvent](#) on *most* other browsers

```
if (document.createEvent) {  
    event = document.createEvent("HTMLEvents");  
    event.initEvent("dataavailable", true, true);  
} else {  
    event = document.createEventObject();  
    event.eventType = "dataavailable";  
}
```

initial



```
var event; // The custom event that will be created  
if(document.createEvent){  
    event = document.createEvent("HTMLEvents");  
    event.initEvent("dataavailable", true, true);  
    event.eventName = "dataavailable";  
    element.dispatchEvent(event);  
} else {  
    event = document.createEventObject();  
    event.eventName = "dataavailable";  
    event.eventType = "dataavailable";  
    element.fireEvent("on" + event.eventType, event);  
}
```

final

SO Evolution:

1. MINOR UPDATES

- Simplified Code
- Best Practice
- Code Improvement

2. MAJOR UPDATES

- Version update
- Deprecated method update
- **Fixing Error**

Edit: `path.strip('')` seems like the wrong thing to do here. Neither Windows nor POSIX appear to encourage quoted PATH items.

```
def which(program):  
    import os  
    for path in os.environ["PATH"].split(os.pathsep):  
        exe = path + os.sep + program  
        if os.path.exists(exe):  
            return exe  
    return None
```

initial



```
def which(program):  
    import os  
    def is_exe(fpath):  
        return os.path.isfile(fpath) and os.access(fpath, os.X_OK)  
  
    fpath, fname = os.path.split(program)  
    if fpath:  
        if is_exe(program):  
            return program  
    else:  
        for path in os.environ["PATH"].split(os.pathsep):  
            exe_file = os.path.join(path, program)  
            if is_exe(exe_file):  
                return exe_file  
  
    return None
```

final

How else is SO being used?

▲ I just found this answer on the Web:

179



```
import unicodedata

def remove_accents(input_str):
    nfkd_form = unicodedata.normalize('NFKD', input_str)
    only_ascii = nfkd_form.encode('ASCII', 'ignore')
    return only_ascii
```

Stack Overflow

```
"import unicodedata

# From http://stackoverflow.com/a/517974/223092
def strip_accents(s):
    return u"".join(
        c for c in unicodedata.normalize('NFKD', s)
        if not unicodedata.combining(c)
    )
```

Git

REASON 1: Borrowed but modified functions/ formula/ import statements

How else is SO being used?

▲ 73 Most of the answers here are obsolete, there is no more `jQuery.browser`, and why would anyone even use jQuery or would sniff the `User Agent` is beyond me.

▼ Instead of detecting a browser, you should rather detect a *feature* (whether it's supported or not).

🔄 The following is `false` in Mozilla Firefox, Microsoft Edge; it is `true` in Google Chrome.

```
"webkitLineBreak" in document.documentElement.style
```

Stack Overflow

```
// is webkit? http://stackoverflow.com/a/16459606/376773
// document is undefined in react-native: https://github.com/facebook/react-native/pull/
return (document && document.documentElement && document.documentElement.style && docume
// is firebug? http://stackoverflow.com/a/398120/376773
(window && window.console && (window.console.firebug || (window.console.exception && w
// is firefox >= v31?
// https://developer.mozilla.org/en-US/docs/Tools/Web\_Console#Styling\_messages
(navigator && navigator.userAgent && navigator.userAgent.toLowerCase().match(/firefox\
// double check webkit in userAgent just in case we are in a worker
(navigator && navigator.userAgent && navigator.userAgent.toLowerCase().match(/appleweb
```

Git

REASON 2: SO Post being used for explanation on how to use a certain method/ concept

INTERESTING FINDINGS (Contd.)

1. Same Git Code being reused in multiple repositories

Post ID	Repo	Repo Name
1480971	saumyamittal/TeeApp	TeeApp
1480971	sschloesser/portfolio	portfolio
1480971	steventactic/TacticConnect	TacticConnect
1480971	unnamed89/xxx	xxx
1480971	veronicakim220/puSSh	puSSh
1480971	DynamoMTL/angular-super-forms	angular-super-forms
1480971	esiyeenuwa/esigdzifa	esigdzifa

```
var childProcess = require("child_process");

function opener(args, options, callback) {
  // http://stackoverflow.com/q/1480971/3191, but see below for Windows
  var command = process.platform === "win32" ? "cmd" :
    process.platform === "darwin" ? "open" :
    "xdg-open";

  if (typeof args === "string") {
    args = [args];
  }

  if (typeof options === "function") {
    callback = options;
    options = {};
  }

  if (options && typeof options === "object" && options.command) {
    if (process.platform === "win32") {
      // *always* use cmd on windows
      args = [options.command].concat(args);
    } else {
      command = options.command;
    }
  }
}
```

INTERESTING FINDINGS (Contd.)

1. Same Git Code being reused in multiple repositories
2. Git Code referencing multiple Stack Overflow posts

evrimfeyyaz/ios-calculator/master/node_modules/dom-serialize/index.js

```
/*
  Storage JSON Conversion
  http://stackoverflow.com/questions/2010892/storing-objects-in-html5-localstorage/2010994
*/
Storage.prototype.setObject = function(key, value) {
  this.setItem(key, JSON.stringify(value));
};

Storage.prototype.getObject = function(key) {
  return JSON.parse(this.getItem(key));
};
```

```
/*
  Comparing arrays
  http://stackoverflow.com/a/14853974/483704
*/
equals: {
  value: function (array) {
    // if the other array is a falsy value, return
    if (!array)
      return false;
```

```
/* GET DATE IN Japan Standard TimeZone
  http://stackoverflow.com/a/10088053/483704
-----*/
Date.getJstDate = function() {
  // create Date object for current location
  d = new Date();
  // convert to msec
  // add local time zone offset
  // get UTC time in msec
  utc = d.getTime() + (d.getTimezoneOffset() * 60000);
  // create new Date object for different city
  // using supplied offset
  return new Date(utc + (3600000*9));
};
```

INTERESTING FINDINGS (Contd.)

1. Same Git Code being reused in multiple repositories
2. Git Code referencing multiple Stack Overflow posts
3. Git Code referencing websites other than Stack Overflow (Tutorials Point)

```
modified from http://pytorch.org/tutorials/intermediate/reinforcement\_q\_learning.html

import gym
import math
import random
import numpy as np
import matplotlib
import matplotlib.pyplot as plt
from collections import namedtuple
from itertools import count
from copy import deepcopy
from PIL import Image

import torch
import torch.nn as nn
import torch.optim as optim
import torch.autograd as autograd
import torch.nn.functional as F
import torchvision.transforms as T

env = gym.make('CartPole-v0')
```