



*Learn JavaScript the quick and easy way,
from the experts at w3schools*

Learn JavaScript[®] and Ajax with w3schools

Add JavaScript
Define functions
Create cookies
Declare variables
Create objects
Build Ajax pages



Learn JavaScript[®] and AJAX with w3schools

**Hege Refsnes, Ståle Refsnes, Kai Jim Refsnes,
and Jan Egil Refsnes
with Kelly Dobbs Henthorne**



WILEY
Wiley Publishing, Inc.

Learn JavaScript® and AJAX with w3schools

Published by
Wiley Publishing, Inc.
111 River Street
Hoboken, NJ 07030-5774
www.wiley.com

Copyright © 2010 by Wiley Publishing, Inc., Indianapolis, Indiana

Published simultaneously in Canada

ISBN: 978-0-470-61194-4

LOC/CIP: 2010925161

Manufactured in the United States of America

10 9 8 7 6 5 4 3 2 1

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as permitted under Sections 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600. Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, N 07030, (201) 748-6011, fax (201) 748-6008, or online at <http://www.wiley.com/go/permissions>.

Limit of Liability/Disclaimer of Warranty: The publisher and the author make no representations or warranties with respect to the accuracy or completeness of the contents of this work and specifically disclaim all warranties, including without limitation warranties of fitness for a particular purpose. No warranty may be created or extended by sales or promotional materials. The advice and strategies contained herein may not be suitable for every situation. This work is sold with the understanding that the publisher is not engaged in rendering legal, accounting, or other professional services. If professional assistance is required, the services of a competent professional person should be sought. Neither the publisher nor the author shall be liable for damages arising herefrom. The fact that an organization or Website is referred to in this work as a citation and/or a potential source of further information does not mean that the author or the publisher endorses the information the organization or Website may provide or recommendations it may make. Further, readers should be aware that Internet Websites listed in this work may have changed or disappeared between when this work was written and when it is read.

For general information on our other products and services please contact our Customer Care Department within the United States at (877) 762-2974, outside the United States at (317) 572-3993 or fax (317) 572-4002.

Trademarks: Wiley, the Wiley logo, and related trade dress are trademarks or registered trademarks of John Wiley & Sons, Inc. and/or its affiliates, in the United States and other countries, and may not be used without written permission. w3schools and the w3schools logo are registered trademarks of w3schools. JavaScript is a registered trademark of Sun Microsystems, Inc. All other trademarks are the property of their respective owners. Wiley Publishing, Inc., is not associated with any product or vendor mentioned in this book.

Wiley also publishes its books in a variety of electronic formats. Some content that appears in print may not be available in electronic books.

Library of Congress CIP Data is available from the publisher.

w3schools Authors/Editors

w3schools' mission is to publish well-organized and easy-to-understand online tutorials based on the W3C Web standards.

Hege Refsnes

Hege is a writer and editor for w3schools. She works to improve the usability and accessibility of the Web.

Hege has been writing tutorials for w3schools since 1998.

Ståle Refsnes

Ståle has ten years of Internet development experience, developing all the Web-based solutions for The Norwegian Handball Federation.

Ståle has been writing tutorials for w3schools since 1999.

Kai Jim Refsnes

Kai Jim has been around computers since childhood, working with them since the age of 14.

He has been writing tutorials for w3schools since completing a bachelor's degree in information technology in 2005.

Jan Egil Refsnes

Jan Egil is the president and founder of w3schools.

He is a senior system developer with a master's degree in information technology and more than 30 years of computing experience.

"Jani" has supervised a large number of company-critical development projects for oil companies like Amoco, British Petroleum, ELF, Halliburton, and Brown & Root. He has also developed computer-based solutions for more than 20 governmental institutions like The National Library, Norwegian High Schools, The State Hospital, and many others.

Jani started w3schools in 1998.

Credits

Acquisitions Editor

Scott Meyers

Production

Abshier House

Technical Editor

Harry Buss

Copy Editor

Abshier House

Associate Director of Marketing

David Mayhew

Production Manager

Tim Tate

**Vice President and Executive Group
Publisher**

Richard Swadley

Vice President and Executive Publisher

Barry Pruett

Associate Publisher

Jim Minatel

Project Coordinator, Cover

Lynsey Stanford

Proofreading and Indexing

Abshier House

Cover Designer

Michael Trent

TABLE OF CONTENTS

Introduction	1
JavaScript	1
AJAX.....	3
How To Use This Book	4
 Section I: JavaScript Basic	 7
 CHAPTER 1: JavaScript How To and Where To	 9
How To Put a JavaScript into an HTML Page.....	9
How to Handle Simple Browsers.....	12
Where to Put the JavaScript	12
Using an External JavaScript	15
 CHAPTER 2: JavaScript Statements and Comments.....	 16
JavaScript Statements	16
JavaScript Comments	18
 CHAPTER 3: JavaScript Variables	 23
Do You Remember Algebra from School?.....	23
JavaScript Variables	23
Declaring (Creating) JavaScript Variables	25
Assigning Values to Undeclared JavaScript Variables.....	25
Redeclaring JavaScript Variables	26
JavaScript Arithmetic	26

CHAPTER 4: JavaScript Operators	27
JavaScript Arithmetic Operators	27
JavaScript Assignment Operators.....	28
The + Operator Used on Strings.....	28
Adding Strings and Numbers	28
CHAPTER 5: JavaScript Comparisons	30
Comparison Operators.....	30
How to Use Comparisons	31
Logical Operators.....	31
Conditional Operator.....	31
CHAPTER 6: JavaScript If...Else Statements	32
Conditional Statements.....	32
if Statement.....	33
if...else Statement	34
if...else if...else Statement.....	36
CHAPTER 7: JavaScript Loops	39
The for Loop.....	39
The while Loop.....	41
The do...while Loop	43
CHAPTER 8: Additional JavaScript Flow Control	
Statements	46
The break Statement	46
The continue Statement	47
JavaScript for...in Statement	48
JavaScript switch Statement.....	50

CHAPTER 9: JavaScript Popup Boxes.....	53
Popup Boxes.....	53
CHAPTER 10: JavaScript Functions	58
How to Define a Function.....	58
JavaScript Function Examples	59
The return Statement	62
The Lifetime of JavaScript Variables	63
CHAPTER 11: JavaScript Events.....	64
onLoad and onUnload	64
onFocus, onBlur, and onChange	65
onSubmit	65
onMouseOver and onMouseOut.....	66
onClick	66
CHAPTER 12: Javascript try...catch and throw Statements.....	67
JavaScript—Catching Errors	67
The try...catch Statement.....	67
The throw Statement.....	70
CHAPTER 13: JavaScript Special Characters and Guidelines	73
Insert Special Characters.....	73
JavaScript Is Case Sensitive.....	74
White Space	74
Break up a Code Line.....	74

Section II: JavaScript Objects77

CHAPTER 14: JavaScript Objects Intro 79

Object-Oriented Programming	79
Properties	79
Methods	80

CHAPTER 15: JavaScript String Object..... 81

String Object.....	81
Examples.....	82

CHAPTER 16: JavaScript Date Object..... 88

Create a Date Object.....	88
Set Dates	89
Compare Two Dates.....	89
Examples.....	90

CHAPTER 17: JavaScript Array Object..... 95

What Is an Array?.....	95
Create an Array	96
Access an Array	96
Modify Values in an Array.....	96
Examples.....	97

CHAPTER 18: JavaScript Boolean Object 107

Create a Boolean Object.....	107
Examples.....	108