AKV1 / WJV1 - Web Technologies: Programming Fundamentals I

Course of Study

This course of study outlines the sequence of learning activities designed to help you develop competency in the subject area of Programming Fundaments with JavaScript. Your competence will be assessed as you complete an objective assessment AKV1 / WJV1. This course of study may take up to eight weeks to complete depending on your educational background, work experience, and the time that you are able to dedicate to your studies. Consult with your course of study mentor if you wish to accelerate your progress through this course of study. It is important that you follow the activities sequentially as you prepare for your assessment. Since programming is a skill, success on the AKV1 requires significant hands-on coding practice to apply the concepts. By reading and completing the coding exercises, you can become an independent learner of JavaScript.

The PDF version will not include the FAQs. FAQs for each topic are available through this web-enabled COS

Introduction

Web development is a fast-growing area of IT that continues to gain importance as e-commerce, social networking, communications, and informational resources expand each day. The development process relies heavily on precise coding skills for functionality of websites. This can be a challenging and fun area of IT since it requires both analytical skills (coding) and creative perspectives (problem solving). To learn this area of IT requires investment of many hours of hands-on practice in coding and hands-on practice in debugging of your mistakes that prevent a successful outcome. You should apply the code as you go to making practice sites of your own. While coding competency requires significant time, precision, and patience, most students find web development to be a very rewarding area of study with great professional relevance for today’s IT careers.

Overview:

If you've ever used an order form on a website, experienced interactive web pages, or multimedia content on a site, chances are your experience was driven in part by
a
language called JavaScript. Prolific sites such as eBay depend on JavaScript, among other web programming languages, to make web content interactive and smart. The demand from today's web users for rich, interactive content has fueled a need in the IT field for professionals with web programming experience. Due to platform independence, browser popularity, AJAX trends, and its use in mobile devices such as the iPhone, JavaScript will certainly remain an important tool in IT. Not only is JavaScript a valuable language for today's web developer, it provides a simple, logical structure for a novice programmer to pursue.

Because of this, many IT students have learned the fundamentals of programming using JavaScript. It contains the same elements of variables, functions, decisions, loops, objects, and arrays that you can transfer to eventually learn more sophisticated languages such as Java or Perl. Whether your career takes you down a path of networking, databases, project management, security, or general IT, you will be better equipped for success in the IT field because you have mastered a web programming language. After all, the future of IT is closely tied to the rapid growth and innovation of the web. Prepare to master JavaScript so you can be a part of that future!

This course of study is specially designed with independent learning resources to make your studies rich yet convenient. WGU has selected independent, self-study learning resources to help you develop competence in the areas of study. Your course of study mentor can help you with pacing and accessing study resources. The Web Technologies mentor can direct you in your studies if you are having a difficult time starting or succeeding with a learning resource. He can also direct you to the best learning resources and support you in your learning, but each student’s success is heavily dependent on fully utilizing the independent learning resources outlined in this guide. The Web Technologies mentor cannot supplant the essential, valuable experience you will gain by completing the assigned independent learning resources. If you do not pass the exam, the Web Technologies mentor may consider your level of completion with the assigned resources in making recommendations for a retake strategy. Finally, please do not bypass the assigned learning resources and diagnostic preassessment tools to simply attempt the exam hoping for a lucky outcome. The AKV1 assessment requires thorough engagement from reading the text and applying the concepts through hands-on practice of the code exercises.

Competencies

The AKV1 assessment covers the following competencies:

Competency: Web Programming Languages
The graduate applies characteristics and features of Web programming languages.

Competency: Variables and Data
The graduate demonstrates the ability to create, modify, and utilize variables and data.

Competency: Decision Structures
The graduate demonstrates understanding of decision structures.

Competency: Function, Methods, Properties, and Events
The graduate demonstrates understanding of functions, methods, properties, and events.

Competency: Controls in Web Programming
The graduate demonstrates understanding of how to control windows and frames in a web programming language.

Competency: Client-Side Web Programming Language
The graduate demonstrates understanding of client side Web programming language.

Competency: Custom Web Programming Language Objects
The graduate demonstrates understanding of custom Web programming language objects.

Assessment Format

The AKV1 requires you to learn the content and achieve a passing score on the 1D0-435 Certified Internet Webmaster JavaScript Fundamentals exam. This exam includes a random selection of 50 items that must be completed within 75 minutes. To achieve a passing score on the exam, you must correctly answer at least 38 of the 50 scored questions to achieve a total score of 75% or greater. Once you have submitted your passing score, you will receive a "Pass" on your AAP for the Programming Fundamentals I Assessment.

Retakes

If you do not pass and a retake is needed, please be aware that the Certified Internet Webmaster exam has a mandatory wait time of 24 hours from the first to second attempt and at least 30 days between the second and third (or subsequent) attempts.

Pacing

As with any learning activity, steps may be completed more quickly than noted below, or they could take the full amount of time indicated. We provide the pacing as a guide to the amount of time you should take to develop the competencies necessary and prepare to complete the required assessment on time. Completing your assessments within the required timeline keeps you on track for satisfactory academic progress and graduation.

Required Learning Resources:

- *CIW JavaScript FundamentalsText w/VCampus Bundle (VCampus Online Practice Exercises)* by ComputerPrep
- NotePad++ software for code practice
- JavaScript for Developers I and II videos by LearnKey (OnlineExpert.com)
- Notebook
- SkillSoft Library

Preparing for Success

This section will cover resource gathering and benchmarking with the preassessment.

Topics

Acquire the Learning Resources

While IT professionals who only know HTML are only able to generate static web content, you will be able to create dynamic, interactive web content. Let's get you started with the proper resources so you can have a smooth start in your JavaScript studies.

Resources

Acquire the Learning Resources

Please review the competencies you will obtain while preparing for this exam, as listed in the Introduction. This course of study will develop your competencies in the following areas: Web Programming Languages; Variables and Data; Decision Structures; Functions, Methods, Properties, and Events; Controls in Web Programming; Client-Side Web Programming Language; and Custom Web Programming Language Objects.

Textbook:
Order your *CIW JavaScript Fundamentals* textbook early. Click the "Learning Resource" tab for the AKV1 to request it. Please allow at least one week for it to arrive by mail and ensure that the university has your

current, correct address before placing the request (Note: Shipment to P.O. boxes is not possible). If your text has still not arrived 10 days from the request date, e-mail learning@wgu.edu and inquire about tracking details for the text.

VCampus:
The VCampus Online Question Engine should be sent to you via e-mail from CIW or VCampus. The e-mail will contain your login link and startup code. If you do not receive an email with your access code, please contact your mentor as they were copied on the registration email.

MeasureUp:
Your mentor will need to manually enroll you in this resource. You'll need the technical assessment (what WGU calls a preassessment).

NotePad++:
URLs:
SourceForge Site: http://sourceforge.net/projects/notepad-plus/
Direct Link: http://downloads.sourceforge.net/notepad-plus/npp.5.2.Installer.exe?use_mirror=superb-west

You will need to download this free software application to use for your hands-on code practice as you read each chapter. This application is available from one of the links above. This is a free syntax sensitive editor. Use this to develop your own HTML and CSS. The AKV1 assesses JavaScript knowledge. Therefore, it is essential that you practice writing JavaScript programs and complete the practice code exercises in your ComputerPREP text. The Notepad++ Editor will facilitate writing code.

Overview of Secondary Learning Resources

There are primary and secondary resources available. All students need to obtain the primary resource listed above. Students who have no previous programming experience may consider the secondary resources as a supplement.

Optional Text:

URL: http://wgu.skillport.com

- *JavaScript Bible, 6th edition* by Danny Goodman and Michael Morrison. (Free SkillSoft Books24x7)

This text is available for free
through your SkillSoft Books24x7 subscription. This book covers the JavaScript language in depth which means it also covers competencies not required by this assessment. You should rely on the *CIW JavaScript Fundamentals* text as your primary resource for coverage of competencies and use the optional text when you need a different author's verbiage about a particular concept.

LearnKey's instructor-led "JavaScript for Developers" Videos:

URL: http://www.learnkey.com/downloads

Click the "Enroll" link for Part I and Part II of this learning resource from your "AKV1 Learning Resource" tab. You will receive a startup e-mail from learnkey.com (or onlineexpert.com) with the startup link and access instructions.

LearnKey support files are available for download on the LearnKey website. Select the one that pertains to the courses you are using.

Helpful links:

URLS:
http://www.htmlgoodies.com/primers/jsp/
http://www.w3schools.com/js/default.asp

You should rely on the ComputerPREP material as your primary resource for coverage of competencies, but you are encouraged to seek out material to help you understand concepts that may still remain unclear. There are a couple of websites, for you to bookmark, that can provide you with additional material.

- JavaScript HTML Goodies primer: http://www.htmlgoodies.com/primers/jsp/
- JavaScript W3Schools tutorial: http://www.w3schools.com/js/default.asp

Creation Of Study Notebook

Begin a paper or digital notebook for your domain of study. Use organizers to separate your work. Suggested dividers include:

- Glossary
- Study Notes
- Competency Review Notes
- Helpful Websites

Take the MeasureUp Preassessment

URL: http://measureup.com

Request the MeasureUp preassessment from your mentor. This preassessment will help you establish your baseline skill set. After you have taken the preassessment, you will be able to determine your current level of proficiency. Contact your mentor when you are ready for this preassessment. Please send your preassessment results to your mentor.

Hands-On Practice

URL: http://notepad-plus.sourceforge.net/uk/site.htm

Since you need to practice JavaScript programming to fully develop your competencies, please download the free editor, Notepad++. You may use this editor to write your code for the practice exercises and labs.

Important Advice: Learning to program is a lot like learning to play a musical instrument or a sport-you only get good through practice and repetition. Programming is a skill; therefore, you cannot just read about it or memorize the commands. You have to do it. Consider how successful a basketball player would be if he or she never practiced in real games but simply read about the game or memorized the rules. You will be amazed at how the hands-on approach to learning JavaScript will aid your overall competency and retention. Each module will have suggested exercises to provide the opportunity to develop your knowledge on website development. Of course, as you work through your *CIW JavaScript Fundamentals* text, please develop all of the labs and exercises provided.

Remember that practice is essential for mastering a programming language. You can't succeed by simply reading about it or trying to memorize the commands, you need to actually do it.

Be sure that for each lesson in the *CIW JavaScript Fundamentals* text, that you do the following:

- Enter the practice code exercise assigned in the book into NotePad++.
- Test drive your JavaScript programs by viewing its parent HTML file within a browser.
- Remember that programming is an exact science and that a single mistake can stop the program from working (Work hard to find any coding mistakes. This is a valuable part of the learning process.).
- Consult the solution files provided on the CD if you cannot locate your coding mistake.

Community Collaboration

Visit and participate on
this course's message boards.

Variables and Data

This section covers variables and data in JavaScript. Competencies to be covered in this module include: variables, operators, and how to write your first JavaScript program. Pay close attention to the details of the syntax. Your syntax must be exact for your scripts to run properly.

Topics

Introduction to Syntax

Have you ever used a shopping cart on a website that shows the total or tax in real time? This is made possible by using variables in the script. After completing the reading and hands-on coding practice exercises, you will be able to create and modify your own variables. You will also create your first JavaScript programs and launch your first interactive JavaScript methods.

Resources

Reading in CIW JavaScript Fundamentals

Read the following in the *CIW JavaScript Fundamentals* text:

- Lesson 1: Introduction to JavaScript
- Lesson 2: Working with Variables and Data in JavaScript

As you complete your reading, pay particular attention to the following exam objectives and write any study notes in your notebook to review:

Lesson 1: Introduction to JavaScript

- 1.1.
  Describe the origins of JavaScript
- 1.2.
  List the key JavaScript characteristics
- 1.3.
  Describe the differences between Java and JavaScript
- 1.4.
  Discern between JavaScript, JScript, and VBScript
- 1.5.
  Differentiate between server-side and client-side JavaScript applications
- 1.6.
  Embed JavaScript into HTML
- 1.7.
  Use the JavaScript comment tags

Lesson 2: Working with Variables and Data in JavaScript

- 2.1.
  Communicate with users through the alert(), prompt() and confirm() methods

- 2.2.
  Define variables
- 2.3.
  Define data types
- 2.4.
  Obtain user input and store it in variables
- 2.5.
  Report variable text to the client window
- 2.6.
  Discern between concatenation and addition
- 2.7.
  Use expressions
- 2.8.
  Use operators
- 2.9.
  Define inline scripting
- 2.10.
  Implement simple events such as onLoad() and onUnload()
- 2.11.
  Define keywords and reserved words

Hands-On Practice

URL: http://notepad-plus.sourceforge.net/uk/site.htm

Complete the following hands-on exploration:

- Lesson 1 and 2 reviews at end of the chapters.
- Hello World Exercise: Using Notepad++, type in the following JavaScript. Make sure you save it with .html extension and select "All File Types" so you don't end up with the default .txt extension.

<HTML>
<HEAD>
<TITLE>Our First Script</TITLE>
</HEAD>
<BODY>
<CENTER>
<H1>Our First Script</H1>
</CENTER>
<SCRIPT Language="JavaScript"> document.write('Hello World')
</SCRIPT>
</BODY>
</HTML>

Complete the following *CIW JavaScript Fundamentals* labs:

- Lab 1-1: Creating a JavaScript-enabled page
- Lab 2-1: Using the alert() method
- Lab 2-2: Using the prompt() method
- Lab 2-3: Using the confirm() method
- Lab 2-5: Storing user data in a JavaScript variable
- Lab 2-6: Assigning and adding variables
- Optional Lab 2-1: Using the JavaScript onUnload event handler and inline scripting

Need Help? Use Secondary Resources

URL: http://lktraining.onlineexpert.com/elearning/login.php

Complete the following tutorials in LearnKey’s “"avaScript for Developers Part 1" (LearnKey can be accessed at the above link.):

- Session 1: Introduction
- Session 1: Language Variations
- Session 1: Object-oriented approach
- Session 1: JavaScript Syntax
- Session 1: Variables and Functions

Note: There is an online textbook that goes with these lessons.

Challenge yourself with these labs. Study the glossary and read the articles and resources to deepen your understanding.

Need More Help? More Secondary Resources

JavaScript web tutorials:
http://www.w3schools.com/js/

Visit the following website for additional information on writing JavaScripts:
http://www.w3schools.com/js/js_intro.asp

Visit the following website for additional information on operators:
http://www.w3schools.com/js/js_operators.asp
Visit the following website for additional information on alert(), prompt() and confirm():
http://www.w3schools.com/JS/js_popup.asp

Community Collaboration

Visit and participate on the message boards.

Program Flow with Decisions and Loops

This section covers functions, methods, properties, and events and program flow.

Competencies in this module include: functions, methods, events and how to control program flow. Remember that exact syntax is required for your scripts to work properly. Pay close attention to the syntax.

Topics

Events, Passing, If, Loops

Have you ever wondered how a program can be made to make decisions, such as deciding whether an entry matches a stored password? After completing the reading and hands-on coding practice exercises, you will be able to create a program that can make decisions and produce conditional output based on the results. We can also control the flow of code in a program using a loop. In fact, loops are in software programs all around you. Did a digital alarm clock wake you this morning? That was a "loop" in the software that kept the alarm cycling.

Resources

Reading in CIW JavaScript Fundamentals

Read lesson 3 ("Functions, Methods, and Events in JavaScript") and lesson 4 ("Controlling Program Flow in JavaScript"). As you complete your reading, pay particular attention to the following exam objectives and write any study notes in your notebook to review:

Lesson 3: Functions, Methods and Events in JavaScript

- 3.1.
  Use methods as functions
- 3.2.
  Define functions
- 3.3.
  Use conversion methods
- 3.4.
  Call functions
- 3.5.
  Pass arguments to functions
- 3.6.
  Return values from functions
- 3.7.
  Define operator precedence
- 3.8.
  Discern between global and local variables
- 3.9.
  Employ the conditional operator
- 3.10.
  Identify user events and event handlers

Lesson 4: Controlling Program Flow in JavaScript

- 4.1.
  Use the if... statement
- 4.2.
  Use the while... statement
- 4.3.
  Define the do...while statement
- 4.4.
  Use the for... statement
- 4.5.
  Use the break and continue statements
- 4.6.
  Use the switch... statement

Hands-On Practice

Complete the following hands-on exploration:

- Lesson 3 and 4 reviews at end of the chapters.

Complete the following *CIW JavaScript Fundamentals* labs:

- Lab 3-1: Creating a user-defined function
- Lab 3-2: Using functions, arguments and return values in JavaScript
- Lab 3-3: Calling a function from within another function
- Lab 4-1: Using IF statements
- Lab 4-2: Using a WHILE statement
- Lab 4-3: Using a FOR statement
- Lab 4-4: Nesting if and break statements inside a for loop
- Lab 4-5: Using a continue statement
- Optional Lab 4-1: Using a switch statement

Type in the switch example on page 4-21.

Need Help? Use Secondary Resources

URL:

http://lktraining.onlineexpert.com/elearning/login.php

Complete the following tutorials in LearnKey’s "JavaScript for Developers Part 1" (LearnKey can be accessed at the above link.):

- Session 1: Built-in Objects
- Session 2: Simple Script
- Session 2: JavaScript with HTML
- Session 2: Conditional Logic
- Session 2: Statements
- Session 2: Loops and Functions
- Session 2: Event Handlers
- Session 2: Error Handling

Note: There is an online textbook that goes with these lessons.

Challenge yourself with these labs. Study the glossary and read the articles and resources to deepen your understanding.

Need More Help? More Secondary Resources

JavaScript web tutorials:

http://www.w3schools.com/js/
Visit the following websites for more on flow of control:

http://www.w3schools.com/js/js_if_else.asp
http://www.w3schools.com/js/js_switch.asp
http://www.w3schools.com/js/js_functions.asp
http://www.w3schools.com/js/js_loop_for.asp
http://www.w3schools.com/js/js_loop_while.asp
http://www.w3schools.com/js/js_break.asp
http://www.w3schools.com/js/js_loop_for_in.asp
http://www.w3schools.com/js/js_events.asp
http://www.w3schools.com/js/js_try_catch.asp
http://www.w3schools.com/js/js_throw.asp

Community Collaboration

Visit and participate on the message boards.

Common JavaScript Objects

This section covers functions, methods, properties, and events of common JavaScript objects.

Competencies in this module include the Document Object Model as well as the different types of objects and methods that are provided by JavaScript.

Topics

DOM, Image, String, and Arrays

After completing the reading and hands-on coding practice exercises, you will be able to use popular objects such as String, Math, and Image. String holds and performs text operations, while Math and Image have operations for numbers and graphics. These are used often in software application across the IT field. String is especially useful in manipulating text data for databases or encryption, while the Math object can be used to find the least or greatest value from a network log. Have you ever resized a graphic in a design application? If yes, then you have given commands that were part of the Image object. Are you ready to learn more?

Resources

Reading in CIW JavaScript Fundamentals

Read lesson 5 ("The JavaScript Object Model") and lesson 6 ("JavaScript Language Objects"). As you complete your reading, pay particular attention to the following exam objectives and write any study notes in your notebook to review:

Lesson 5: The JavaScript Object Model

- 5.1.
  Describe the JavaScript object model
- 5.2.
  Use the window object
- 5.3.
  Manipulate properties and methods of the document object
- 5.4.
  Use the with statement
- 5.5.
  Deploy the image object
- 5.6.
  Use the history object
- 5.7.
  Evaluate and change URL information with the location object
- 5.8.
  Use the navigator object

Lesson 6: JavaScript Language Objects

- 6.1.
  Use the String object to test user input
- 6.2.
  Identify basic regular expressions and the RegExp object
- 6.3.
  Deploy the Array object to create more efficient code
- 6.4.
  Identify uses for the Date and Math objects

Hands-On Practice

Complete the following hands-on exploration:

- Lesson 5 and 6 reviews at end of the chapters.

Complete the following *CIW JavaScript Fundamentals* labs:

- Lab 5-1: Launching a new window
- Lab 5-2: Writing content to new windows
- Lab 5-3: Changing status bar text
- Lab 5-4: Using properties and methods of a remote object
- Lab 5-5: Using the image object
- Optional Lab 5-1: Using the location object with a condition
- Optional Lab 5-2: Using the navigator object

Write a JavaScript program that uses the go() method to send a user back two pages.

Complete the following *CIW JavaScript Fundamentals* lab:

- Lab 6-1: Using String object formatting methods

Type in the string.lastindexOf() example using "ABRACADABRA" on page 6-13

Type in the string.substring() example using "ABC1234XYZ" on page 6-13

Create a JavaScript to practice using the String methods indexOf(), charAt(), length(), italics, sub(), and sup().

Complete the following *CIW JavaScript Fundamentals* labs:

- Lab 6-2: Applying String methods to text
- Lab 6-3: Creating an Array object
- Lab 6-4: Using the Date object
- Lab 6-5: Creating an onscreen clock
- Optional Lab 6-1: Using the Math object to generate a random quotation

Type in the Math.round() example on page 6-35. Experiment on using the Math.max(), Math.min(), Math.ceil(), Math.floor(), and Math.sqrt() methods.

Need Help? Use Secondary Resources

URL:

http://lktraining.onlineexpert.com/elearning/login.php

Complete the following tutorials in LearnKey’s "JavaScript for Developers Part 1" (LearnKey can be accessed at the above link.):

- Session 2: Multiple windows
- Session 2: Arrays

Note: There is an online textbook that goes with these lessons.

Challenge yourself with these labs. Study the glossary and read the articles and resources to deepen your understanding.

Need More Help? More Secondary Resources

JavaScript web tutorials:

http://www.w3schools.com/js/
Visit the following website for more on using the date object:

http://www.w3schools.com/js/js_obj_date.asp

Visit the following website for more on JavaScript object hierarchy:

http://www.w3schools.com/jsref/default.asp

Community Collaboration

Visit and participate on the message boards.

Control of Windows, Forms, and Frames, Part 1

This section covers controls in web programming.

Competencies in this module cover the power of JavaScript to create interactive forms. You will also learn about cookies and JavaScript security. Remember that exact syntax is required for your scripts to work properly. Pay close attention to the syntax.

Topics

Forms, Cookies, and Security

After completing the reading and hands-on coding practice exercises, you wwll be able to create your own web forms. You can celebrate your success with some cookies. (Not that kind.) Cookies are JavaScript files that allow you to move data from variables into a file for browser access later.

Resources

Reading in CIW JavaScript Fundamentals

Read lesson 7 ("Developing Interactive Forms with JavaScript") and lesson 8 ("Cookies and JavaScript Security") in *CIW JavaScript Fundamentals*.

As you complete your reading, pay particular attention to the following exam objectives and write any study notes in your notebook to review:

Lesson 7: Developing Interactive Forms with JavaScript

- 7.1.
  Identify and use form controls
- 7.2.
  Refer to form objects
- 7.3.
  Define the form object
- 7.4.
  Use the button object
- 7.5.
  Use the checkbox object
- 7.6.
  Evaluate text in the text and textarea objects
- 7.7.
  Process radio object options
- 7.8.
  Capture choices from a select list
- 7.9.
  Conduct form validation

Lesson 8: Cookies and JavaScript Security

- 8.1.
  Explain cookies
- 8.2.
  Delete cookies from your disk
- 8.3.
  Assign a cookie
- 8.4.
  Test for the presence of a cookie
- 8.5.
  Clear a cookie
- 8.6.
  Enable and disable cookies in the browser
- 8.7.
  Use cookies and passwords to restrict entry to a page
- 8.8.
  Discuss security issues relevant to JavaScript
- 8.9.
  Define signed scripts

Hands-On Practice

Complete the following hands-on exploration:

- Lesson 7 and 8 reviews at end of the chapters.

Complete the following *CIW JavaScript Fundamentals* labs:

- Lab 7-1: Using a textbox, a checkbox, and a button
- Optional Lab 7-1: Conducting form validation
- Lab 7-2: Using radio buttons
- Lab 7-3: Using a select object
- Lab 7-4: Using a multiple-selection list

Practice enabling and disabling cookies in Microsoft Internet Explorer by following the steps on pages 8-10 through 8-12.

Complete the following *CIW JavaScript Fundamentals* lab:

- Lab 8-1: Setting, viewing, and clearing a cookie
- Optional Lab 8-1: Setting passwords in cookies
- Lab 8-2: Locking the browser with malicious code

Need More Help? Use Secondary Resources

URL:

http://lktraining.onlineexpert.com/elearning/login.php

Complete the following tutorials in LearnKey’s "JavaScript for Developers Part 1", accessed at the above link:

- Session 3: Working with HTML forms
- Session 3: Validating data

- Session 3: Working with images
- Session 3: Scripting techniques

Complete all of the included instructor assignments. Study the glossary and download the practice files. Read chapters 12-16.

Need More Help? Use JavaScript Tutorials

http://www.w3schools.com/jsref/jsref_obj_date.asp

Visit the above website for more on using the Date object.

Need More Help? Use Other Resources

Read pertinent chapters in your optional textbooks, such as *The Javascript Bible*.

Community Collaboration

Visit and participate on the message boards.

Control of Windows, Forms, and Frames, Part 2

This section covers client-side web programming language. Competencies covered in this module include: controlling frames and creating custom objects in JavaScript. Remember that exact syntax is required for your scripts to work properly. Pay close attention to the syntax.

Topics

Creating and Calling Frames

Every masterpiece deserves a great frame, right? Frames in websites allow multiple HTML pages to be displayed in unison, side-by-side. The effect can be quite impressive, and you can throw data back and forth between the various frames. After completing the reading and hands-on coding practice exercises, you will be able to create your own masterpiece, a website composed of multiple frames.

Resources

Reading in CIW JavaScript Fundamentals

Read lesson 9 ("Controlling Frames with JavaScript"). As you complete your reading, pay particular attention to the following exam objectives and write any study notes in your notebook to review:

Lesson 9: Controlling Frames with JavaScript

- 9.1.
  Target frames with JavaScript
- 9.2.
  Change two or more frames simultaneously
- 9.3.
  Use functions and variables within framesets
- 9.4.
  Use functions and variables with related windows
- 9.5.
  Target the opener window

Hands-On Practice

Complete the following hands-on exploration:

- Lesson 9 and 10 reviews at end of the chapters.

Complete the following *CIW JavaScript Fundamentals* lab:

- Lab 9-1: Targeting frames
- Optional Lab 9-1: Building a frameset page
- Lab 9-2: Calling functions from parent and child frames with JavaScript
- Lab 9-3: Calling functions from parent and child windows with JavaScript

Need More Help? Use Secondary Resources

URL:

http://lktraining.onlineexpert.com/elearning/login.php

Complete the following tutorials in LearnKey’s "JavaScript for Developers Part 2", accessed at the above link:

- Session 2: Frames
- Session 2: Cookies
- Session 2: Applets
- Session 2: JavaScript Libraries
- Session 2: Performance Tips

Complete all of the included instructor assignments. Study the glossary and download practice files. Read chapters 21-22.

Community Collaboration

Visit and participate on the message boards.

Custom JavaScript Objects

This section covers custom web programming language objects.

Topics

Creating Custom Objects and Methods

So you've become a wizard at using all of the JavaScript variables, methods, properties, and objects so far, and you should be proud. You now understand the building blocks of software, but there is a more advanced technique in JavaScript that allows you to make your own custom objects such as Customer.checkout or Student.enroll that enables you to model real world data scenarios. While this is your most advanced JavaScript topic, the need for it is quite simple: to achieve real-world data objects that can be shared and cloned for less redundancy. The skills you learn here provide a valuable bridge to more advanced object-oriented languages, such as Java, which you encounter later in your degree program.

Resources

Reading in CIW JavaScript Fundamentals

Read lesson 10 ("Custom JavaScript Objects") in *CIW JavaScript Fundamentals*.

As you complete your reading, pay particular attention to the following exam objectives and write any study notes in your notebook to review:

Lesson 10: Custom JavaScript Objects

- 10.1.
  Create a custom JavaScript object
- 10.2.
  Define properties and methods of custom objects
- 10.3.
  Create new object instances
- 10.4.
  Create client-side databases using custom objects
- 10.5.
  Create functions and methods for manipulating client-side databases

Hands-On Practice

Complete the following hands-on exploration:

- Type in code on pages 10-6 and 10-7 for the constructor productObject() and function displayOne() to practice the syntax for creating constructors and for creating methods for custom objects.
- Review the example code at this website:
  http://www.techotopia.com/index.php/JavaScript_Object_Basics
- Optional Lab 10-1: Creating a custom object

SkillSoft Lesson

URL: http://wgu.skillport.com

Complete the following SkillSoft tutorial: JavaScript: Scripting.

You can access this tutorial by clicking: My Plan > AKV1 > JavaScript Client-Side Scripting > JavaScript: Scripting.

As you complete your reading, pay particular attention to the following, and write any study notes in your notebook to review:

- Best practices for creating Dynamic HTML by using client-side scripting

Measuring Your Progress

URL: http://measureup.com

Now that you have completed your studies, it is time to review the key concepts and repeat the MeasureUp preassessment to assess your understanding of the JavaScript competencies.

1. Download the JavaScript Quick Reference sheet from the author of *The JavaScript Bible* and review: http://www.dannyg.com/dl/JSB4RefPoster.pdf.
2. Do JavaScript Fundamentals MeasureUp Practice Tests.
3. Your mentor must manually enroll you for this resource. You will need the practice test key to start. Have your mentor request this for you at the appropriate time.
4. Note: MeasureUp is good as a diagnostic but not as a study tool. It is not a comprehensive question bank; it is only a cross-section. You can know every question in the MeasureUp bank and still fail the real exam. MeasureUp is used for benchmarking before and after your studies.
5. If after using this learning resource you need further assistance, please feel free to post a question in the learning community or contact the course of study mentor directly.

Practice Test Review

This section will help you review for your actual assessment.

Topics

ExamForce

ExamForce has two parts: a testing engine and a database. It is a powerful tool because it is adaptive; i.e., it chooses questions from its database based on user weaknesses, while still providing enough questions from strong areas to maintain strength. It divides what is presented into Passes. Once you have completed three Passes, you are ready to sit for the actual exam.

Resources

Enroll in ExamForce

Go to the AKV1 Learning Resources tab to enroll on your AAP. You may not enroll until you have completed this COS. Shortly after enrolling, usually within 1-2 business days, you will receive an e-mail from ExamForce with your license key and instructions. Follow them carefully to download both the test engine and the database. **NOTE: ExamForce databases are quite large, possibly over 100 MB.**

After installation, you will occasionally receive the opportunity to download and install updates. Download and install major updates with caution because they erase your History! Minor updates
do not do this. Check with your mentor before accepting a major update.

Take the Pretest

This is not the same as the pre-assessment that you took at the beginning of your studies. The Pretest Mode sets up initial conditions for the next Activity, Adaptive Drill Mode. Before moving on, though, take a look at the report produced from your Pretest. It will show you which exam objectives represent weaknesses for you. Additionally, it refers you to sections of its built-in review text for additional explanation.

Adaptive Drill Mode

Once you have reached the Adaptive Drill Mode, do not install major updates from ExamForce as this will erase your history. This warning will mention the fact that you have chosen to download a major database update. Please do not select the option to update.

You will be given a series of questions to respond to. Passes are units of progress through the ExamForce database that systematically work on your weak areas while maintaining your strengths. The ExamForce learning resource allows you to take notes as you work through the questions. If you get a question incorrect, you will be referenced to the appropriate section and chapter in the included textbook. There is a built in historical analysis system to track and monitor your activities. In order for your assessment referral to be approved, you MUST successfully complete all three phases
of assessment readiness within the historical analysis system. Your results must be emailed to your mentor for confirmation.

Email the Historical Analysis to Your Mentor

When all three Passes are complete, e-mail the report to your mentor. It is required as part of your record prior to approving a referral for the certification exam. The Historical Analysis report is always available either from the History button at the top of the ExamForce application, or from the Historical Analysis button in the Adaptive Drill tab. You may choose to e-mail it using several formats, but WGU requires a pdf version, so select that option.

Conclusion

Congratulations! Upon completion of the practice exams, you have already successfully accomplished the goals of mastering the competencies set forth by WGU. By studying the chapters, lesson reviews, and the hands-on practice associated with each competency, you have acquired the knowledge and skills necessary for passing your AKV1 assessment in addition to your competency in mastering basic web programming in JavaScript. If you feel that you are still not confident with the AKV1 assessment, please go over the competencies and their associated chapters before taking the actual assessment.

Topics

Review of Major Points

As demonstrated above, this course of study covers competencies of AKV1. Over the last several weeks, you have read the chapters and completed the hands-on coding practice exercises. The important skills for programming fundaments include: variables, functions, decision logic, loops, arrays, objects and their methods, forms, frames, window control, and custom objects. In the event you are still weak in a certain area once you repeat the pretest to assess your gains, you can review the appropriate chapter and invest more time in the hands-on practice exercises. Remember also that programming is a very cumulative skill, so master earlier chapters before attempting to review later chapters.

The competencies and their associated chapters are:

Competency 418.2.1: Web Programming Languages

The graduate applies characteristics and features of Web programming languages.

- ComputerPREP Lesson, chapter 1 “Introduction to JavaScript”

Competency 418.2.2: Variables and Data

The graduate demonstrates the ability to create, modify, and utilize variables and data.

- ComputerPREP Lesson, chapter 2 "Working with Variables and Data in JavaScript"

Competency 418.2.3: Decision Structures

The graduate demonstrates understanding of decision structures.

- ComputerPREP Lesson, chapter 4 "Controlling Program Flow in JavaScript"

Competency 418.2.4: Function, Methods, Properties, and Events

The graduate demonstrates understanding of functions, methods, properties, and events.

- ComputerPREP Lesson, chapter 3 "Functions, Methods, and Events in JavaScript"

Competency 418.2.5: Controls in Web Programming

The graduate demonstrates understanding of how to control windows and frames in a Web programming language.

- ComputerPREP Lesson, chapter 7 "Developing Interactive Forms With JavaScript"
- ComputerPREP Lesson, chapter 9 "Controlling Frames with JavaScript"

Competency 418.2.6: Client-Side Web Programming Language

The graduate demonstrates understanding of client side Web programming language.

- ComputerPREP Lesson, chapter 5 "The JavaScript Object Model (DOM)"
- ComputerPREP Lesson, chapter 6 "The JavaScript Objects (Window, Image, String, Array, Math)"
- ComputerPREP Lesson, chapter 8 "Cookies and JavaScript Security"

Competency 418.2.7: Custom Web Programming Language Objects

The graduate demonstrates understanding of custom Web programming language objects.

- ComputerPREP Lesson, chapter 10 "Custom JavaScript Objects"

Transfer and Application to Work

Acquiring knowledge from textbooks is only part of the learning process. The ultimate goal of learning is to turn knowledge into skills that can be readily applied in the practical field. The following are some recommendations for transferring knowledge acquired through textbooks into practical skills for the real work environment:

Emphasis on course of study activities:

Practice makes perfect. Hands-on practice helps turn short-term memory into long-term memory. Personal experience also helps reinforce learning outcomes.

Research on solutions through various channels:

There are many ways to research solutions for issues associated with continuity planning and disaster recovery, including the use of the Internet to look for solutions that are not addressed in textbooks. Since new issues may appear in the real work environment, textbooks are not good enough to cover all of them. Learning through research helps explore new solutions to new problems.

Collaborate and cooperate with peers or other students:

There are different ways of learning, including the use of cooperation and collaboration to facilitate learning processes. Working with your coworkers, fellow classmates, and even with other students in the learning community will definitely exert positive impact on your learning outcomes.

Next Steps: Take the Assessment

Once you have completed all the tasks associated with the competencies, chapters, activities, lesson reviews, hands-on practices, and preassessment(s), you can start scheduling for the actual assessment at a Prometric testing center. The following are the steps necessary for making arrangements for the actual assessment:

Log in to your My WGU Student Portal.

1. Go to the "My AAP" tab.
2. In the list below "Course Details," find the assessment called "Web Technologies-Program Fundamentals I."
3. In the "Assessment Scheduled Date" column, click "Schedule Now."
4. In the window that pops up, click "Search."
5. A new window will come up. In this window, you can either select a previously-used site or search for a different site approved by WGU. Select the site(s) by clicking on the box beside the name. This will move your selection(s) to the "Selected Sites" box.
6. Once you have selected at least one site, click "Update."
7. You will be returned to the previous window, and the site information will now be filled in. Click "Continue."
8. Enter three different potential dates with the times you can take the assessment. *Note: The dates must be at least two weeks from the day you refer for the assessment.*
9. Click "Continue" once your potential dates and times are filled in.
10. If there are other considerations you would like to inform the Assessment Delivery Team about, discuss them in the "Other Considerations" box that appears and then click "Continue." If not, simply click "Continue."
11. A request will be sent to your mentor for approval.
12. Once your mentor has approved your request our Vendor Assessment Team will send you an email that contains a voucher number. Hold onto this email; you will need it later.
13. With the voucher number, you will need to contact Prometric Testing Center (http://www.prometric.com/TestTakers/default.htm) to arrange the actual date for the real assessment.
14. After the exam, submit your test results according to the instructions received in the voucher e-mail received in step 12, above.
15. Please contact your mentor if your AAP does not reflect the status of your assessment results after 3 business days.

Our best wishes to you for passing the AKV1 assessment!

Feedback

If you wish to provide feedback on this Course of Study, please contact Cheryl Bagshaw at cbagshaw@wgu.edu.

ADA Requirements

Please review the **University ADA policy.**