

Web Designers and Developers

NOC 2175

Introduction

Web designers and developers research, design, develop and produce Internet and intranet sites. They are employed in computer software development firms, information technology consulting firms and in information technology units throughout the private and public sectors, or they may be self-employed.

The most important Essential Skills for Web Designers and Developers are:

- Oral Communication
- Decision Making

Document Sections

- Reading Text
- Document Use
- Writing
- Numeracy
- Oral Communication
- Thinking Skills
 - Problem Solving
 - Decision Making
 - Critical Thinking
 - Job Task Planning and Organizing
 - Significant Use of Memory
 - Finding Information
- Working with Others
- Computer Use
- Continuous Learning
- Notes

A. Reading Text

Reading Text

Tasks	Complexity Level	Examples
Typical	1 to 4	<p>Web Designers and Developers</p> <ul style="list-style-type: none"> • read descriptions, directions and explanations on work orders for details of jobs such as modifications to web pages. (1) • read e-mail for details of web page design ideas, feedback on web designs, meeting arrangements and ongoing projects from supervisors, clients and graphic artists. (2) • read and interpret requests for proposals, project proposals and web design and development contracts. They read to understand the full text and then refer to locate details such as technical specifications, timeframes, project objectives and costs. They may also read confidentiality and copyright agreements. (3) , (weekly) • read clients' company policies, regulations and governing principles. For example, they read policies on corporate identity and privacy to ensure that all regulations are being met when they develop or modify Internet and intranet sites. (3)
Most Complex	4	<ul style="list-style-type: none"> • read trade publications such as Communication Arts and Vice. They read to stay abreast of emerging trends, technologies and issues in web design, development and programming. For example, they read research articles about users' reactions to different web interfaces. (3) • read software and programming manuals, textbooks and on-line tutorials. They may initially read manuals cover-to-cover and then refer to specific troubleshooting, installation and usage instructions. For example, they read on-line tutorials when learning how to use new programs such as Vector graphics. (4) • read descriptive and explanatory text in reports when making design and structural changes to Internet and intranet sites. For example, they read monthly and semi-annual web traffic reports that outline changes in usage and explain data and trends. The text is dense with content-specific terminology and may require interpretation to apply to specific Internet and intranet sites. (4)

Reading Summary

The symbol √ is explained in the Use of Symbols section.

Type of Text	Purpose for Reading			
	To scan for specific information/To locate information	To skim for overall meaning, to get the 'gist'	To read the full text to understand or to learn	To read the full text to critique or to evaluate
Forms	√	√		
Labels	√			
Notes, Letters, Memos	√	√	√	
Manuals, Specifications, Regulations	√		√	
Reports, Books, Journals	√	√	√	

B. Document Use

Document Use

Tasks	Complexity Level	Examples
Typical	1 to 3	<p>Web Designers and Developers</p> <ul style="list-style-type: none"> • scan computer hardware labels for types, models, serial numbers, voltages and other data. (1) • locate dates, hours, web site visits and other data in lists and tables. For example, they scan spreadsheets to locate the number of hours spent on projects and project deadlines when setting job priorities and assigning tasks. They also use data and speed linkage tables to determine how well sites are functioning. (2) • complete and verify information on forms such as timesheets, customer information and requisition forms, and cost estimate sheets. They check off items and enter details such as dates, web use data and brief explanations of changes and modifications. They also verify information such as costs, dates, lists of items and brief explanatory text on update and approval forms, invoices and requisitions before starting web design and development jobs. (2)
Most Complex	3	<ul style="list-style-type: none"> • locate and review specific data on graphs such as bar and pie charts. For example, they may review monthly web traffic bar graphs and frequency distribution pie charts when monitoring web sites for usage and performance. (3) • review web flowcharts and storyboards to understand the flow of web page navigation and identify how to link pages, frames and web sites, and improve the flow. (3) , (weekly) • analyze the design of web pages to identify design elements and evaluate visual appeal. For example, they review the size, location and colour of design features to make sure that pages are visually appealing and not too crowded. (4)

Examples

- create web site storyboards or flowcharts to describe the traffic flow.
- build bar charts and line graphs to illustrate findings from monthly and semi-annual web traffic reports to display changes in usage.
- sketch web page designs and layouts. For example, web designers draw shapes and lines to demonstrate how proposed web pages may look.
- may create original graphics such as logos, banners, backgrounds and illustrations.

Document Use Summary

- Read signs, labels or lists.
- Complete forms by marking check boxes, recording numerical information or entering words, phrases, sentences or text of a paragraph or more. The list of specific tasks varies depending on what was reported.
- Read completed forms containing check boxes, numerical entries, phrases, addresses, sentences or text of a paragraph or more. The list of specific tasks varies depending on what was reported.
- Read tables, schedules or other table-like text (e.g., read work shift schedules).
- Create tables, schedules or other table-like text.
- Enter information on tables, schedules or other table-like text.
- Plot information on graphs (e.g. line, pie, bar).
- Obtain specific information from graphs or charts.
- Interpret information on graphs or charts.
- Construct or draw graphs or charts.
- Recognize common angles such as 15, 30, 45 and 90 degrees.
- Draw, sketch or form common shapes such as circles, triangles, spheres, rectangles, squares, etc.
- Read schematic drawings (e.g. electrical schematics).
- Create schematic drawings.
- Make sketches.
- Obtain information from sketches, pictures or icons (e.g., computer toolbars).

C. Writing

Writing

Tasks	Complexity Level	Examples
Typical	1 to 3	<p>Web Designers and Developers</p> <ul style="list-style-type: none"> • write brief notes and messages to record key points and web page changes. They place comments into computer code to let others know what particular lines of code do or to explain programs' operations. (1) • write e-mail to clients and supervisors on a variety of topics. For example, they write messages to provide project updates, request clarification of change orders and request comments about web designs. (2) • may write new sections and updates to company policies covering matters such as web site publication and approval procedures for new web pages. They strive to write policies clearly and explicitly so that co-workers and client companies' staff can easily understand them. (3)
Most Complex	4	<ul style="list-style-type: none"> • write brief web site overview and evaluation reports. For example, they may prepare web site reviews, which outline equipment and computer software requirements, content revision suggestions and web page design changes. (3) • prepare training and support materials for clients and co-workers. For example, they may write user support documents for uploading data, updating web sites and troubleshooting web site functioning. They write web site maintenance and troubleshooting guidelines and training and support materials geared towards users' skill levels. (3) • may write and edit short texts posted on Internet and intranet sites. They may create or revise web site content to achieve a tone and style, which will appeal to specific target audiences and suit their purposes. They also research and integrate information provided by clients to create compelling texts for the sites. (3) • write a variety of reports such as web site project summaries, final project reports and analysis reports for clients and supervisors. These reports may outline development and research methodologies, details of Internet and intranet site capacities, items that require immediate attention and monitoring, and recommended actions. They summarize and explain web site user surveys and statistics such as traffic, site usage, sales and web page link speeds. (4)

		<ul style="list-style-type: none"> • write technical articles for on-line newsletters. For example, a web developer may write an article on coding shortcuts for creating web page style sheets. They strive to explain the technical procedures using plain language. (4)
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Writing Summary

The symbol √ is explained in the Use of Symbols section.

Length	Purpose for Writing						
	To organize/ to remember	To keep a record/to document	To inform/ to request information	To persuade/ to justify a request	To present an analysis or comparison	To present an evaluation or critique	To entertain
Text requiring less than one paragraph of new text	√	√	√				
Text rarely requiring more than one paragraph				√	√		
Longer text				√	√	√	

D. Numeracy

The symbol \surd is explained in the Use of Symbols section.

Numeracy

Tasks	Complexity Level	Examples
\surd Money Math	2 to 3	<p>Web Designers and Developers</p> <ul style="list-style-type: none"> • calculate claim amounts for travel expenses such as car expenses and meals using established per kilometres and per diem rates. (Money Math), (2) • review and approve invoices for web site design, development and maintenance costs. They verify that the rates, quantities, taxes and totals are correct. (Money Math), (3) • may establish and monitor schedules for short and long-term projects. When scheduling, they consider the incremental staff requirements of concurrent projects; and monitor human resources, equipment and material requirements and adjust them to stay on schedule. (Scheduling, Budgeting & Accounting Math), (3) • complete cost analyses for equipment, supplies and services for web page development and maintenance considering requirements, quality and usage patterns. For example, they compare the cost of web site hosting offered by various suppliers to establish the best value. (Scheduling, Budgeting & Accounting Math), (3) • may establish budgets for large web site development and maintenance projects. They budget for human resource costs, overhead, materials and supplier costs such as translation services. They modify budgets to incorporate unexpected costs such as additional time for difficult design features and staff time to troubleshoot linkage problems. (Scheduling, Budgeting & Accounting Math), (3) , (monthly) • calculate the heights, widths and length of web page design features such as graphics, text and advertisement boxes. They convert between inches, centimetres and pixels to scale designs to fit a range of standard screens. (Measurement and Calculation Math), (2)
\surd Scheduling, Budgeting & Accounting Math	3	
\surd Measurement and Calculation Math	2	
\surd Data Analysis Math	1 to 3	
\surd Numerical Estimation	1 to 2	

		<ul style="list-style-type: none"> • compare web page download and upload times to standards. For example, they review the transfer speeds between the purchase and the view cart action web pages to ensure the speeds are within the established targets or specifications. (Data Analysis Math), (1) • compare monthly web site data such as traffic and links to monitor upward or downward trends. (Data Analysis Math), (2) • monitor and analyze web site data to draw conclusions about the functioning of Internet and intranet sites. For example, they calculate and compare average web site traffic and types of web site usage to make recommendations for improvements. (Data Analysis Math), (3) • monitor and analyze statistics such as customer profile studies, purchasing and web usage trends for particular consumer groups or groups of web site users to draw conclusions about trends and upcoming needs. (Data Analysis Math), (3) • estimate distances and dimensions when viewing web pages and designs. (Numerical Estimation), (1) • estimate the time required to complete project tasks. They may need to consider factors such as complexity of tasks and number of management approval levels. Failure to create accurate estimates can damage their organizations' reputations. (Numerical Estimation), (2)
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Math Skills Summary

a. Mathematical Foundations Used

The symbol \surd is explained in the Use of Symbols section.

Mathematical Foundations Used

Code	Tasks	Examples
Number Concepts		
\surd	Whole Numbers	Read and write, count, round off, add or subtract, multiply or divide whole numbers. For example, reading and writing dates and times; specifying graphic sizes in pixels; counting web site hits; multiplying hourly rates by the number of hours worked.
\surd	Integers	Read and write, add or subtract, multiply or divide integers. For example, tracking changes in established levels in web site usage as positive or negative values.
\surd	Rational Numbers - Fractions	Read and write, add or subtract fractions, multiply or divide by a fraction, multiply or divide fractions. For example, measuring graphic sizes in fractions of a page; recording portions of hours worked as fractions.
\surd	Rational Numbers - Decimals	Read and write, round off, add or subtract decimals, multiply or divide by a decimal, multiply or divide decimals. For example, measuring sizes in centimetres and millimetres for page layouts; calculating costs for budgets; multiplying length and width measurements to calculate how much space is available on web pages.
\surd	Rational Numbers - Percent	Read and write percents, calculate the percent one number is of another, calculate a percent of a number. For example, describing size of web page design elements as percentages of pages; calculating web site traffic increases and decreases as a percentage.
\surd	Equivalent Rational Numbers	Convert between fractions and decimals or percentages. Convert between decimals and percentages. For example, converting design element sizes from percents to fractions.
\surd	Other Real Numbers	Use powers and roots, scientific notation, significant digits. For example, measuring the height and width of graphics in centimetres and millimetres; measuring and calculating storage space in megabytes and gigabytes.

Code	Tasks	Examples
Patterns and Relations		
√	Equations and Formulae	Use formulae by inserting quantities for variables and solving. For example, using formulae to calculate the areas of plane figures such as rectangles, circles and triangles to determine how much area design elements are using on web pages.
√	Use of Rate, Ratio and Proportion	Use a rate showing comparison between two quantities with different units. Use a ratio showing comparison between two quantities with the same units. For example, measuring linkage speeds and transfer rates in bytes per second to compare the linkage speed between web pages to established standard rates; using ratio to describe the relationship between design elements, such as the ratio of banner size to the rest of the web page.
Shape and Spatial Sense		
√	Measurement Conversions	Perform measurement conversions. For example, converting between pixels, inches and millimetres to lay out web page elements.
√	Areas, Perimeters, Volumes	Calculate areas. For example, calculating the areas of rectangles, circles and triangles.
√	Geometry	Use geometry. For example, using principles of geometry to calculate lines and angles to design and lay out web pages and other graphic design elements. Recognizing common angles. Drawing, sketching and forming common forms and figures.
Statistics and Probability		
√	Summary Calculations	Calculate averages. Calculate rates other than percentages. For example, calculating average web site activities such as hits, traffic; calculating hosting space requirements; calculating average page loading speeds; establish data transfer rates in megabytes per second.
√	Statistics and Probability	Use descriptive statistics (e.g. collecting, classifying, analyzing and interpreting data). Use inferential statistics (e.g. using mathematical theories of probability, making conclusions about a population or about how likely it is that some event will happen). For example, collecting and analyzing marketing, business and user data such as user profile information and types of online purchases. They use these analyses to make web site design recommendations and forecast future usage. Using tables, schedules or other table-like text. Using graphical presentations

b. How Calculations are Performed

- In their heads.
- Using a pen and paper.
- Using a calculator.
- Using a computer.

c. Measurement Instruments Used

- Time. For example, using timers on computers.
- Distance or dimension. For example, using on-screen rulers.
- Angles. For example, using protractors and set angles in drawing and design software.
- Use the SI (metric) measurement system.
- Using the imperial measurement system.

E. Oral Communication

Oral Communication

Tasks	Complexity Level	Examples
Typical	2 to 3	Web Designers and Developers <ul style="list-style-type: none">• participate in ongoing discussions with committee members, co-workers, clients and colleagues about projects. For example, they discuss the suitability of web designs with clients and co-workers. They interact with clients for the duration of projects to keep them informed and seek approval on designs. They also receive technical support such as hardware purchasing suggestions, storage requirements and coding shortcuts from system analysts and programmers. (2)• may lead meetings with co-workers, colleagues and clients to discuss project details such as web design features, links, structures, and equipment requirements. They present research summaries, discuss options and advise clients on web design and development. (3)• negotiate contracts with clients, consultants and suppliers. For example, they negotiate terms for purchasing data storage space from suppliers, development time from consultants, and prices, terms and conditions for web development projects with clients. (3)
Most Complex	3	

		<ul style="list-style-type: none"> • may participate in conferences and policy meetings on various topics such as graphics standards and intellectual copyright. As web design and development experts, they who offer insights and advice on proposed standards and policies. (3) • facilitate training sessions for co-workers and clients' staff. For example, they provide one-on-one and group training sessions on topics such as maintaining and updating information on web sites. (3)
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Modes of Communication Used

- In person.
- Using a telephone.

Environmental Factors Affecting Communication

Significant environmental factors affecting oral communication were not reported by job incumbents.

Oral Communication Summary

The symbol √ is explained in the Use of Symbols section.

Purpose for Oral Communication (Part I)						
Type	To greet	To take messages	To provide /receive information, explanation, direction	To seek, obtain information	To co-ordinate work with that of others	To reassure, comfort
Listening (little or no interaction)						
Speaking (little or no interaction)						
Interact with co-workers			√	√	√	
Interact with those you supervise or direct			√	√	√	
Interact with supervisor/ manager			√	√		
Interact with peers and colleagues from other organization			√	√	√	
Interact with customers/ clients/ public			√	√		
Interact with suppliers, servicers			√	√	√	
Participate in group discussion			√	√	√	
Present information to a small group			√	√		
Present information to a large group						

The symbol √ is explained in the Use of Symbols section.

		Purpose for Oral Communication (Part II)				
Type	To discuss (exchange information, opinions)	To persuade	To facilitate, animate	To instruct, instill understanding, knowledge	To negotiate, resolve conflict	To entertain
Listening (little or no interaction)						
Speaking (little or no interaction)						
Interact with co-workers	√			√		
Interact with those you supervise or direct	√		√	√		
Interact with supervisor/ manager	√					
Interact with peers and colleagues from other organization	√					
Interact with customers/ clients/ public	√	√	√	√	√	
Interact with suppliers, servicers	√	√			√	
Participate in group discussion	√		√	√	√	
Present information to a small group			√	√		
Present information to a large group						

F. Thinking Skills

1. Problem Solving

Problem Solving

Tasks	Complexity Level	Examples
Typical	3	<p>Web Designers and Developers</p> <ul style="list-style-type: none"> • may face conflicts concerning the ownership of web site projects in large companies. They develop strategies to help co-workers from different departments develop solutions such as joint Internet site partnerships. They recommend the creation of working committees to promote cooperation and coordination. (3) • face clients who will not devote the funds needed to create accessible and well-designed Internet and intranet sites. Clients may lack the knowledge and understanding of web design and related technical limitations. Web designers and developers complete situational analyses and prepare business rationales to increase clients' understanding, and persuade them to put more resources into web site development. (3)
Most Complex	3	<ul style="list-style-type: none"> • may find that co-workers and clients' staff are not complying with web publication policies and standards. They prepare and circulate bulletins outlining the effects of non-compliance and restating institutional approval procedures for web sites. If they are unable to change co-workers' behaviour, they seek help from their managers. (3) , (weekly) • encounter delays in Internet development projects. For example, they find that consultants and co-workers fail to meet deadlines, and required graphics, text and other electronic deliverables are unavailable. They reorganize schedules and tasks to counter the delays. They may also discipline unreliable employees and seek different suppliers. (3)

2. Decision Making

Decision Making

Tasks	Complexity Level	Examples
Typical	2 to 3	<p>Web Designers and Developers</p> <ul style="list-style-type: none"> • make web site design and development decisions. For example they decide how to structure web site databases and their levels of access, link web pages and the pop-ups embedded in them to promote further browsing within the web sites, and where to place graphics, text and other design elements. (2) • may decide to bid on or accept design projects by considering factors such as deadlines, availability of key personnel, levels of expertise, required software and clients' preferences. Their ability to quickly assess project requirements is important to ensuring they do not lose time reviewing requests for proposals for projects that may be unprofitable for their company or beyond their level of expertise. (2) , (daily)
Most Complex	3	<ul style="list-style-type: none"> • decide which initial design features of Internet and intranet sites to present to clients and supervisors. They consider the purposes of the web sites, anticipated users and the budgets available. They may carry out research into clients' companies and develop profiles of anticipated users to make informed design decisions. (3) • may decide to provide their staff with software training by considering project deadlines, graphic design trends, new software, training costs and time, and the long-term benefits. Training decisions may require supervisors' approvals. (3) • decide what to post on Internet and intranet sites. They choose graphics and text which they think will be effective and yet conform to clients' policies and corporate brand identities. They select only graphics and text for which they have or can obtain reproduction rights. (3)

3. Critical Thinking

Critical Thinking

Tasks	Complexity Level	Examples
Typical	2	<p>Web Designers and Developers</p> <ul style="list-style-type: none"> • evaluate clients' needs. For example, they work in conjunction with system analysts to assess clients' storage space needs, and develop criteria to identify appropriate specifications for storage and retrieval systems to satisfy them. (2) • evaluate the quality and usability of Internet and intranet sites using established evaluation criteria such as link speed, accessibility of information, number of hits and overall web site usage. They use their expertise and knowledge of web design and development when analyzing the data, drawing conclusions and making recommendations. (3)
Most Complex	3	<ul style="list-style-type: none"> • judge the suitability and effectiveness of web site content. They use established criteria such as logical flow, interesting content and good overall design. Failure to think critically about the key topics and links often results in disjointed web sites. (3) • evaluate the quality and suitability of graphics and design features for web sites by consulting web design publications and standards, research studies, competitors' sites and their sites. They also consider web sites' purpose and intended audiences, clients' budgets and software capabilities. (3) • evaluate the performance of co-workers and consultants by monitoring their work and assessing their motivation and ability to work independently through observing their ability to meet deadlines. Their judgements of employees' performance is key to building and maintaining strong development teams. (3)

4. Job Task Planning and Organizing

Job Task Planning and Organizing

Complexity Level	Description
3	<p data-bbox="522 373 954 411">Own job planning and organizing</p> <ul data-bbox="552 426 1398 751" style="list-style-type: none"><li data-bbox="552 426 1398 751">• Web designers and developers schedule their own job tasks to meet multiple project deadlines. They have many competing demands for their time, including responding to queries from clients, providing support to co-workers, completing design and development tasks, preparing reports and troubleshooting web site malfunctions, so their job task planning must be flexible. In addition, they coordinate and integrate job tasks with programmers, system analysts, network technicians and other staff. <p data-bbox="522 766 967 804">Planning and organizing for others</p> <ul data-bbox="552 819 1386 926" style="list-style-type: none"><li data-bbox="552 819 1386 926">• Web designers and developers may be responsible for planning the timelines and task requirements for project and scheduling job tasks for co-workers and contractors.

5. Significant Use of Memory

Examples

- remember keyboard shortcuts for a variety of software programs.
- remember where to locate information on Internet and intranet sites, and which content expert to call for technical guidance and advice.
- remember web designs they envisioned while talking with clients until they can draw or create the designs.
- remember policies, style guides and standards for clients' web sites.

6. Finding Information

Finding Information

Tasks	Complexity Level	Examples
Typical	2	<p>Web Designers and Developers</p> <ul style="list-style-type: none"> • seek opinions and information from co-workers and colleagues to solve problems. For example, they may phone network managers for information on slow web page loading problems. (2)
More Complex	4	<ul style="list-style-type: none"> • draw on information from resource materials, colleagues and clients when troubleshooting coding and software errors. They may need to seek opinions and advice from several technical resources and integrate them for the correct information. (4)

G. Working with Others

Working with Others

Complexity Level	Description
3	<p>Web designers and developers spend much of their time working independently when designing and developing web sites. On larger projects, they coordinate tasks and exchange information with other team members both nationally and internationally. They may work as team members or leaders depending on their organizations' structures, project designs and personal experience. They may demonstrate, train and assign tasks to junior web designers.</p>

Participation in Supervisory or Leadership Activities

- Participate in formal discussions about work processes or product improvement.
- Have opportunities to make suggestions on improving work processes.
- Monitor the work performance of others.
- Inform other workers or demonstrate to them how tasks are performed.
- Orient new employees.
- Make hiring recommendations.
- Make hiring decisions.
- Select contractors and suppliers.
- Assign routine tasks to other workers.
- Assign new or unusual tasks to other workers.
- Identify training that is required by, or would be useful for, other workers.

H. Computer Use

Computer Use

Tasks	Complexity Level	Examples
Typical	3 to 4	<p>Web Designers and Developers</p> <ul style="list-style-type: none"> • use word processing. For example, they write project reports and design proposals, which require extensive desktop publishing. They format text, lay out pages and import design elements from other programs. (3) • use communication software. For example, they send attachments through e-mail, and maintain their address books and distribution lists. They may also use day planners, calendars and alarm features in some e-mail programs. (3) • use graphics software. For example, they create banners, backgrounds, illustrations, animations and other design elements for use in web sites. They require extensive knowledge of graphics programs and functions to create complex designs and decide which software to use for different design elements. They may train and coach others to create web site graphics. (4)
Most Complex	5	<ul style="list-style-type: none"> • use databases. For example, they design and create on-line catalogues using programs such as Access, setting structures, and designing filtering and sorting processes to extract data. (4) • use spreadsheets. For example, they create spreadsheets to maintain project, budget, and web site design data. They insert formulae to transform, summarize and automatically update data, and generate graphs to display them. (4) • use hardware and system skills. For example, they update and reload application software and configure network settings for clients' computers. They recommend equipment and software purchases, install programs and hardware to upgrade their own and clients' computers, and set up networks writing batch files and operating system scripts. (4)

		<ul style="list-style-type: none"> • do programming and software design and development, by modifying codes using a variety of utility programs. For example, they assemble web site layouts using programming languages such as HyperText Markup Language, Common Gateway Interface script, Java script and Flash animation script. They also scan codes to locate faulty programming when troubleshooting interfacing and linking problems between application programs and web pages, and select programming languages appropriate for different applications. (5) • use the Internet. For example, they read on-line web design and development textbooks using Internet Explorer. They create, upload and produce final web sites using programs such as Dreamweaver, Front Page and Cold Fusion. They create style sheets to trap colours, manage fonts and archive files using a variety of utility programs, and on-line animations using programs such as Macromedia Flash MX and Macromedia. They also test and edit software code to ensure compatibility and consistency between different browsers, and publish and test the functioning of the Internet and intranet sites on host servers before making them active on the web. They may maintain the sites for durations of project contracts. (5)
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Computer Use Summary

- Use word processing.
- Use graphics software.
- Use a database.
- Use a spreadsheet.
- Do programming or systems and software design.
- Use communications software.
- Use Internet
- Hardware and system
- Other

I. Continuous Learning

Continuous Learning

Complexity Level	Description
4	Web designers and developers need to learn continuously because their field is changing constantly and rapidly. Their learning is often motivated by demands of current projects and they spend lots of time updating their knowledge on the latest technologies and trends. They are expected to identify their own learning needs and resources, decide which conferences and seminars to attend and which books to read. In addition, they identify relevant learning resources such as reference manuals, on-line chat rooms and industry publications. They also draw on their background knowledge to apply new learning to particular situations and their continuous learning ability is directly linked to their effectiveness in designing, developing and creating quality web sites.

How Learning Occurs

Learning may be acquired:

- As part of regular work activity.
- From co-workers.
- Through training offered in the workplace.
- Through reading or other forms of self-study
 - at work.
 - on worker's own time.
 - using materials available through work.
 - using materials obtained on worker's own initiative.
- Through off-site training
 - during working hours at no cost to the worker.
 - partially subsidized.
 - with costs paid by the worker.

J. Other Information

In addition to collecting information for this Essential Skills Profile, our interviews with job incumbents also asked about the following topics.

Physical Aspects

Web designers and developers sit for long periods using upper limb coordination to use the keyboard and pointing devices. They usually handle equipment or supplies weighing less than five kilograms and require keen colour perception and spatial awareness to develop aesthetically pleasing web pages.

Attitudes

The web designers and developers interviewed felt individuals in this occupation must be goal-oriented, self-motivated and willing to spend long hours working alone.

Future Trends Affecting Essential Skills

Future changes in the industry will necessitate web designers to improve their computer and software skills. They will also need to think critically and communicate effectively to succeed in an increasingly competitive industry.

K. Notes

This profile is based on interviews with job incumbents across Canada and validated through consultation with industry experts across the country.

For information on research, definitions, and scaling processes of Essential Skills Profiles, please consult the Readers' Guide to Essential Skills Profiles

(<http://www.hrsdc.gc.ca/eng/jobs/les/profiles/readersguide.shtml>).