

Web Developers and Programmers



Web development is a growing aspect of business development and expansion. Web developers and programmers are information technology professionals, possessing tools that are applicable to roles in the information technology sector, such as programming, database management and software design. The analytical skills and abilities they exercise in their work are desirable in professional and scientific roles outside of information technology, and can also find some utility in roles within supervision.

Skills

Skills are developed through training and experience, and are the practical proficiencies someone possesses. The following are top key skills web developers and programmers employ in their work:

1. Programming
2. Critical Thinking
3. Operations Analysis
4. Complex Problem Solving
5. Reading Comprehension

Tasks

Tasks are the assigned duties that an occupational group performs in their daily work. The following are the tasks web developers and programmers most regularly encounter:

1. Design websites or web applications.
2. Create electronic data backup to prevent loss of information.
3. Create databases to store electronic data.
4. Test software performance.
5. Update website content.

Technical Knowledge

Technical Knowledge is the understanding of theory and utility of modern tools in a work environment. The following tools are used by web developers and programmers regularly:

1. Web platform development software
2. Graphical user interface development software
3. Development environment software
4. Program testing software
5. Database management software

Abilities

Abilities refer to the innate faculties that allow workers to carry out tasks and activities. The following are the top abilities that database web developers and programmers possess:

1. Deductive Reasoning
2. Information Ordering
3. Oral Comprehension
4. Problem Sensitivity
5. Inductive Reasoning

Skills Transferability Matrix

FOCAL's Skills Transferability Matrices analyze the transferability of an occupation across a multitude of other occupations on the basis of similarities in **skills, technical knowledge, tasks,** and **abilities** as outlined by the O*Net database. It aims to show workers how to leverage their skill set in changing occupations, planning a career path, and transitioning to other industries. It also assists policy makers and educators address changing skill sets and areas of opportunity for workforce entrants in developing industries. Employers can also use this tool in reskilling or upskilling workers to circumvent skills shortages, and reduce the hiring and training challenges.

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Occupations	Skills	Technology	Tasks	Abilities	Total
Information systems analysts and consultants	84%	100%	51%	88%	81%
Computer network technicians	80%	94%	35%	88%	74%
Database analysts and data administrators	87%	94%	22%	90%	73%
Computer programmers and interactive media developers	83%	87%	17%	87%	68%
Software engineers and designers	80%	58%	5%	84%	57%
Industrial designers	85%	44%	0%	85%	54%
Drafting technologists and technicians	86%	37%	0%	89%	53%
Statistical officers and related research support occupations	81%	44%	0%	84%	52%
Industrial engineering and manufacturing technologists and technicians	85%	40%	0%	84%	52%
Technical occupations in geomatics and meteorology	82%	42%	0%	84%	52%
Architectural technologists and technicians	83%	33%	0%	88%	51%
Civil engineering technologists and technicians	83%	37%	0%	84%	51%
Supervisors, supply chain, tracking and scheduling co-ordination occupations	71%	52%	0%	81%	51%
Electrical and electronics engineering technologists and technicians	74%	44%	0%	78%	49%
Contractors and supervisors, electrical trades and telecommunications occupations	72%	29%	0%	80%	45%

After scanning over 2,600 skills, technical competencies, tasks, and abilities of each of the 500 occupations as defined by the National Occupational Classification (NOC) system, a skills transferability matrix for web developers and programmers is produced. In the matrix above, a high score is highlighted in green and indicates the high transferability potential of an attribute of an occupation with that of web developers and programmers. Lower or no transferability areas are marked in red. Web developers and programmers have high transferability with other occupations in information technology, with similar tools and core skills employed throughout the sector. The closest transferability is with information systems analysts and consultants. Outside of information systems and computer technology, loose transferability is observed with various technicians and technologist and engineering roles, indicating that transferability out of their specialty area may come with challenges. This may include long education or certification times. Web developers and programmers have some upward mobility to software engineering and design roles, but also supervision within telecom and supply chain environments.

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