



Software Developer and Software Quality Assurance Analyst and Tester

About

Software developers create the computer applications that allow users to do specific tasks and the underlying systems that run the devices or control networks. Software quality assurance analysts and testers design and execute software tests to identify problems and learn how the software works.

Job Outlook and Salary



- Projected regional employment in 2024 is **110,577**
- The statewide projected average annual growth rate over the next five years is **3.82%**
- The average annual wage is **\$143,789** (Seattle MSA)
- Hourly wages range from **\$54.66/HR** (25th percentile) to **\$78.65/HR** (75th percentile)

Job Tasks



- Analyze users' needs and then design and develop software to meet those needs
- Recommend software upgrades for customers' existing programs and systems
- Design each piece of an application or system and plan how the pieces will work together
- Create a variety of models and diagrams showing programmers the software code needed for an application
- Ensure that a program continues to function normally through software maintenance and testing
- Document every aspect of an application or system as a reference for future maintenance and upgrades
- Create test plans, scenarios, and procedures for new software
- Identify project risks and recommend steps to minimize those risks
- Implement software testing, using either manual or automated programs and exploratory testing, and evaluate results
- Document and report defects or problems with software
- Provide feedback to software developers and stakeholders regarding usability and functionality

Education and Training



- Software developers, quality assurance analysts, and testers typically need a Bachelor's degree in computer and information technology or a related field, such as engineering or mathematics. Computer and information technology degree programs cover a broad range of topics. Students may gain experience in software development by completing an

internship, such as at a software company, while in college. For some software developer positions, employers may prefer that applicants have a master's degree.

- **Although writing code is not their primary responsibility, developers must have a strong background in computer programming.** They usually gain this experience in school. Throughout their career, developers must keep up to date on new tools and computer languages.

Work Schedule



- Most software developers, quality assurance analysts, and testers work full time.

Skills



- **Analytical skills.** Software developers, quality assurance analysts, and testers must evaluate users' needs and then design software to function properly and meet those needs.
- **Communication skills.** These workers must be able to give clear instructions and explain problems that arise to other team members involved in development. They must also be able to explain to nontechnical users, such as customers, how the software works and answer any questions that arise.
- **Creativity.** Software developers, quality assurance analysts, and testers must be innovative in their approaches to designing, identifying problems with, and improving computer software.
- **Detail oriented.** These workers often need to concentrate on many parts of an application or system at the same time, and they must pay attention to detail when looking for potential areas of user error.
- **Interpersonal skills.** Software developers, quality assurance analysts, and testers must be able to work well with others who contribute to designing, programming, and testing successful software.
- **Problem-solving skills.** Because these workers produce software from beginning to end, they must be able to solve problems that arise throughout the design process.

Technology



- **Development environment software:** Advanced business application programming ABAP; Apache Ant; Common business oriented language COBOL; Go
- **Database management system software:** Amazon DynamoDB; Elasticsearch; MongoDB; Oracle PL/SQL
- **Object or component oriented development software:** — Apache Groovy; Apache Spark; Objective C; Scala

- **Web platform development software:** Backbone.js; Microsoft ASP.NET Core MVC; React; Spring Framework

Opportunities for Advancement



- Software developers can advance to become project management specialists or computer and information systems managers, positions in which they oversee the software development process.

Education and Training Resources

The following regional education and training programs are examples of programs in the region that can help you obtain education and credentials to become a Software Developer and Software Quality Assurance Analyst and Tester. Some programs may require additional preparation and completion of prerequisites.



County	Programs
King County	<ul style="list-style-type: none"> • Ada Developers Academy (https://adadevelopersacademy.org/) • Apprenti (https://apprenticareers.org/locations/washington/) • Bellevue College (https://www.bellevuecollege.edu/) • Cascadia College (https://www.cascadia.edu/) • City University of Seattle (https://www.cityu.edu/) • Code Fellows (https://www.codefellows.org/) • Coding Dojo (https://www.codingdojo.com/campus/washington-coding-bootcamp) • Computing for All (https://www.computingforall.org/) • DigiPen Institute of Technology (https://www.digipen.edu/) • Flatiron School (https://flatironschool.com/) • Galvanize, Inc. (https://www.galvanize.com/) • General Assembly (https://generalassembly.ly/browse) • Green River College (https://www.greenriver.edu/) • Highline College (https://highline.edu) • Lake Washington Institute of Technology (https://www.lwtech.edu/) • North Seattle College (https://northseattle.edu/) • Renton Technical College (https://https://www.rtc.edu/) • Seattle Central College (https://seattlecentral.edu/) • Seattle Pacific University (https://spu.edu/) • Seattle University (https://www.seattleu.edu/) • Shoreline Community College (https://shoreline.edu) • South Seattle College (https://southseattle.edu/) • STEP Computer Academy (https://itstep.us/) • TLG Learning Camp (https://career.tlglearning.com/)

County	Programs
	<ul style="list-style-type: none"> • University of Washington/Bothell (https://www.uwb.edu/) • University of Washington Professional And Continuing Education (https://www.pce.uw.edu/) • Western Governors University Seattle (https://www.wgu.edu/washington.html)
Kitsap County	<ul style="list-style-type: none"> • Olympic College (https://www.olympic.edu/)
Pierce County	<ul style="list-style-type: none"> • Bates Technical College (https://www.batestech.edu/) • Clover Park Technical College (https://www.cptc.edu/) • Pacific Lutheran University/School of Education and Kinesiology (https://www.plu.edu/education/) • Pierce College (https://www.pierce.ctc.edu/) • TLG Learning Camp Murray (https://career.tlglearning.com/camp-murray/) • University of Washington Tacoma (https://www.tacoma.uw.edu/)
Snohomish County	<ul style="list-style-type: none"> • Edmonds College (https://www.edmonds.edu/) • Everett Community College (https://www.everettcc.edu/)

Resources to Scholarships and Assistance Programs

- Washington State Opportunity Scholarship: <https://www.waopportunityscholarship.org/about/>
- Washington College Grant: <https://wsac.wa.gov/wcg>

References

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- Software Quality Assurance Analysts & Testers at My Next Move. (n.d.). Retrieved August 18, 2021, from <https://www.mynextmove.org/profile/summary/15-1253.00>
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