

Computer Programmers

SOC: 15-1251 • Career Profile Report

■ Key Facts

\$98,670 Median Salary	7,200 Employment	-6.0% Growth Rate
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■ Requirements & Salary Range

Education: Bachelor's degree

■ Automation Risk Assessment

Low Risk - 12.0% probability of being automated in the next 10-20 years.
This job is relatively safe from automation due to its creative, social, or complex problem-solving requirements.

■ Work-Life Balance

6.5/10 - Good work-life balance

■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

Realistic	7.4/10	Investigative	9.2/10
Artistic	4.6/10	Social	5.4/10
Enterprising	5.6/10	Conventional	6.8/10

■ Top Skills Required

Analytical skills, Communication skills, Detail oriented, Problem-solving skills

✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

■ Challenges

- Burnout Risk
- Rapid Technological Change

■ What They Do

Computer Programmers are technology professionals who write, test, and maintain **code that enables software applications, systems, and devices to function**. They turn ideas, algorithms, and specifications into instructions that computers can execute, forming the foundation of modern digital products and services. Their work supports everything from websites and mobile apps to enterprise systems and embedded technologies.

This career is well suited for individuals who enjoy problem-solving, logical thinking, and building solutions through code.

What Do Computer Programmers Do?

Computer programmers develop and refine software by translating requirements into executable code. Their responsibilities emphasize accuracy, efficiency, and reliability.

Common responsibilities include:

- Writing and testing code in various programming languages
- Debugging and fixing software errors
- Maintaining and updating existing programs
- Collaborating with developers, designers, and analysts
- Optimizing code for performance and scalability
- Documenting software functionality and changes
- Ensuring software meets quality and security standards

Types of Computer Programmers

Programmers may specialize by platform, language, or application type:

- Application Programmers: Develop desktop, web, or mobile software.
- Systems Programmers: Work on operating systems and low-level software.
- Web Programmers: Build and maintain websites and web applications.
- Database Programmers: Develop code for data storage and retrieval systems.
- Embedded Systems Programmers: Write software for hardware devices.
- Automation and Scripting Programmers: Create scripts to streamline processes.

Skills and Abilities Needed

Computer programmers combine technical skill with analytical thinking.

Core Professional Skills

Personal Qualities That Matter

Education and Career Pathway

Computer programmers enter the field through a variety of educational routes:

- Bachelor's Degree: In computer science, software engineering, or a related field
- Associate Degree or Certificate: Technical or vocational programming programs
- Self-Directed Learning: Coding bootcamps and independent study
- Internships or Entry-Level Roles: Practical experience in software development
- Ongoing Skill Development: Keeping up with programming languages and frameworks

Where Do Computer Programmers Work?

Computer programmers are employed across nearly all industries:

- Technology and Software Companies
- Corporate IT Departments

- Financial Services and FinTech Firms
- Healthcare and Research Organizations
- Government and Defense Agencies
- Startups and Freelance Projects

Many roles offer remote or hybrid work opportunities.

How Much Do Computer Programmers Earn?

Earnings vary based on skills, experience, and specialization:

- Entry-Level Programmers: Typically earn professional starting salaries
- Experienced Programmers: Often earn higher pay with advanced technical skills
- Specialized or Senior Programmers: May earn more in high-demand domains

Compensation depends on industry, location, and technology stack.

Is This Career Difficult?

Programming is intellectually demanding and requires sustained focus. The challenge lies in debugging complex issues, adapting to rapidly changing technologies, and maintaining code quality over time. Persistence and continuous learning are key to long-term success.

Who Should Consider Becoming a Computer Programmer?

This career may be a strong fit if you:

- Enjoy solving logical and technical problems
- Like building things with code
- Are comfortable learning new tools and languages
- Prefer focused, independent work with collaboration
- Want a flexible career with broad industry applications

How to Prepare Early

- Learn basic programming concepts and languages early
- Practice coding through projects and challenges
- Study math, logic, and problem-solving
- Use version control and collaborate on small projects
- Explore internships, open-source contributions, or coding clubs

Computer programmers bring software to life by transforming ideas into code, enabling the digital systems that power modern society.