Systems Software Developers

Occupational Profile

DOES THIS DESCRIBE YOU?

Work Interests involve descriptive categories (compatible with Holland's Model) attributed to success in this career:

- **Conventional** – Enjoy following set procedures and routines developed through higher authority; includes working with data and details more than with ideas.
- **Investigative** – Involves working with ideas requiring an extensive amount of research, fact finding, problem solving, and thought analysis.
- **Realistic** – Involves work activities that include practical, hands-on problems and solutions; often dealing with plants, animals, and real-world materials like wood, tools, and machinery.

Work Styles depict worker characteristics conducive for this career:

- **Attention to Detail**
- **Analytical Thinking**
- **Dependability**
- **Initiative**
- **Adaptability/Flexibility**

Work Values are associated with aspects of work that provide satisfaction in this career:

- **Achievement**—Sense of accomplishment; results oriented.
- **Recognition**—Advancement potential.
- **Working Conditions**—Job security; good working conditions.

Aptitudes reflect an ability to acquire skills and knowledge for success in this career:

- **Oral Comprehension**
- **Written Comprehension**
- **Oral Expression**
- **Deductive Reasoning**
- **Inductive Reasoning**

OVERVIEW

Research, design, develop, and test operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computing applications. Set operational specifications and formulate and analyze software requirements. May design embedded systems software. Applies principles and techniques of computer science, engineering, and mathematical analysis. Belongs to the Information Technology career cluster and Network Systems and Programming and Software Development career pathways.

SKILLS & KNOWLEDGE NEEDED

Basic Skills:
- Reading Comprehension
- Active Listening
- Speaking
- Critical Thinking
- Complex Problem Solving

Technology Skills:
- Development Environment Software
- Object or Component Oriented Development Software
- Operating System Software
- Program Testing Software
- Web Platform Development Software

Knowledge:
- Computers and Electronics
- Engineering and Technology
- Mathematics
- Telecommunications
- Design

ESTIMATED & PROJECTED EMPLOYMENT

Occupational Title	2014 Estimated Employment	2024 Projected Employment	2014-24 Employment Change	Annual Growth Rate (%)	Total Annual Openings
Total, All Occupations	1,795,100	1,949,240	154,140	0.9	58,145
Computer & Mathematical Occupations	33,550	39,630	6,080	1.8	1,140
Software Developers, Systems Software	2,790	3,220	430	1.5	85

Source: https://www.iowaworkforcedevelopment.gov/occupational-projections

2017 WAGE & SALARY ($)

Occupational Title	Mean Wage	Mean Salary	Entry Wage	Entry Salary	Exp Wage	Exp Salary
Total All Occupations	20.93	43,539	10.09	20,991	26.35	54,813
Computer & Mathematical Occupations	35.88	74,629	21.29	44,287	43.17	89,800
Software Developers, Systems Software	42.91	89,261	30.16	62,727	49.29	102,528

Source: https://www.iowaworkforcedevelopment.gov/occupational-employment-and-wages

EDUCATION & TRAINING

Education	Work Experience	Job Training
Bachelor's Degree	None	None

Many employers desire applicants possessing a bachelor's degree (and in some cases an advanced degree) in a related field, such as computer science, software engineering, or information systems.

Sources: https://www.iowaworkforcedevelopment.gov/occupational-projections and https://www.bls.gov/emp/ep_education_training_system.htm

NATIONAL CAREER READINESS CERTIFICATE (NCRC)

Skill	Median Skill Level	Minimum Skill Level	Maximum Skill Level
Applied Mathematics	4	4	6
Locating Information	4	4	5
Reading for Information	5	5	5
Applied Technology	n.a.	n.a.	n.a.
Business Writing	4	3	4
Workplace Observation	4	4	4
Listening for Understanding	3	2	3

An ACT assessment-based credential issued in determining essential work skills needed for employment success across industries and occupations. The greater the score, the greater the skill level (Bronze = 3, Silver = 4, Gold = 5, Platinum = 6 & higher). Source: http://www.act.org/content/act/en/products-and-services/workkeys-for-employers/assessments.html

ADDITIONAL SOURCES:

PRIMARY INDUSTRY SECTORS

(Where are Systems Software Developers Employed?)
Computer & Electronic Product Mfg
Professional, Scientific, and Technical Services
Credit Intermediation
Agriculture

Source: https://www.iowaworkforcedevelopment.gov/occupational-projections

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