

Occupation Sector - ICT

Name of the Occupation/ Job

Software Developer

Occupation/ Job description

Software Developer is a person who develops the applications for people to do specific tasks on a computer or another device. The other part is to develop the underlying systems that run the devices or that control networks Applications. Software developers design computer applications, such as word processors and games, for consumers. Creative minds behind the computer programs are called “Software developers”. One part of the job is to develop.

Main categories:

- Applications Software Developer
- Systems Software Developer

Duties of the Occupation/Job

- Analyze users’ needs and then design, test, 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 (such as flowcharts) that show 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
- Collaborate with other computer specialists to create optimum software

Expected Income per Month

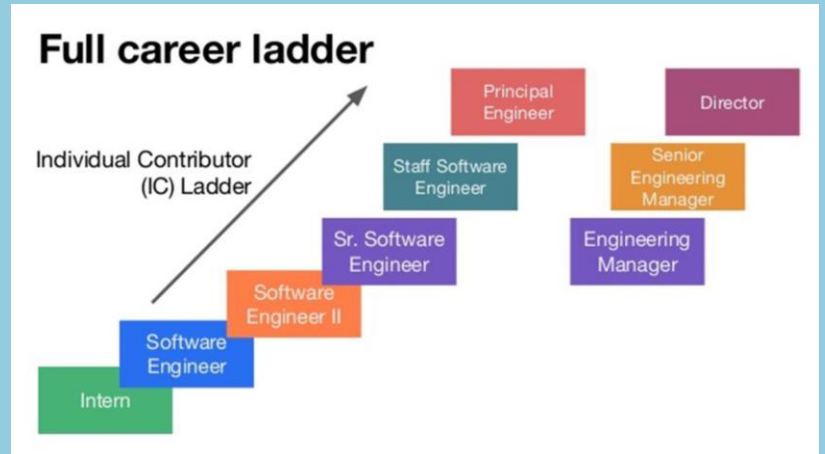
Average salaries of various positions as Software Developers are as follows. But the payments are subject to the level of knowledge, skills and competencies

- Intern -20,000-60,000
- Junior Software Developer – 60,000-100,000
- Software Developer -100,000-200,000
- Senior Developer –above 200,000

Working Environment

In general, software development is a collaborative process, and developers work on teams with others who also contribute to designing, developing, and programming successful software. Most software developers work full time and additional work hours are common. However, some developers work at home.

Available Career Paths



Skills/Attributes and training needed –

Knowledge

- **Computers and Electronics** — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- **Engineering and Technology** — Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.
- **English Language** — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- **Mathematics** — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
- **Design** — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

Technology Skills

- **Data base management system software**
Apache Cassandra Hot technology ; Mongo DB Hot technology ; Oracle PL/SQL Hot technology ; Teradata Database
- **Development environment software**
Advanced business application programming ABAP Hot technology ; Apache Ant Hot technology ; C; Microsoft Visual Basic Scripting Edition VBScript.
- **Object or component oriented development software**
C++ Hot technology ; Oracle Java Hot technology ; Practical extraction and reporting language Perl Hot technology ; Python
- **Program testing software** — Hewlett Packard LoadRunner; JUnit Hot technology; Selenium Hot technology ; Source code editor.
- **Web platform development software** — AJAX Hot technology ; Google AngularJS Hot technology ; Hypertext markup language HTML Hot technology ; Microsoft ASP.NET Core MVC

Skills

- **Programming** — Writing computer programs for various purposes. See more occupations related to this skill.
- **Systems Analysis** — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.
- **Systems Evaluation** — Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.
- **Judgment and Decision Making** — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

- **Complex Problem Solving** — identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

Abilities

- **Deductive Reasoning** — the ability to apply general rules to specific problems to produce answers that make sense.
- **Inductive Reasoning** — The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- **Problem Sensitivity** — The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Information ordering** — The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).
- **Near Vision** — The ability to see details at close range (within a few feet of the observer).

Other attributes

- **Analytical skills.** Developers must analyze users' needs and then design software to meet those needs.
- **Communication skills.** Developers must be able to give clear instructions to others working on a project. They must also explain to their customers how the software works and answer any questions that arise.
- **Creativity.** Developers are the creative minds behind new computer software.
- **Detail oriented.** Developers often work on many parts of an application or system at the same time and must therefore be able to concentrate and pay attention to detail.
- **Interpersonal skills.** Software developers must be able to work well with others who contribute to designing, developing, and programming successful software.

- **Problem-solving skills.** Because developers are in charge of software from beginning to end, they must be able to solve problems that arise throughout the design process.

Entry Qualification for the Occupation/Job

Software developers usually have a bachelor's degree, typically in computer science, software engineering, or a related field. Computer science degree programs are the most common, because they tend to cover a broad range of topics. Students should focus on classes related to building software to better prepare themselves for work in the occupation. Many students gain experience in software development by completing an internship at a software company while in college. For some positions, employers may prefer that applicants have a master's degree.

Alternative pathways

There are several alternative pathways to become a Software Engineer for the people who don't have an IT degree.

1. Internships : by showing the required skills such as innovation, analytical skills and problem solving skills etc to a company (for example: winning in a recognized competition, exams, various events organized by industry stakeholders such as www.futurecareersbridge.net) candidates can join some IT companies as interns and start their career towards a Software Engineer
2. Self-Learning – Candidates can learn IT online and apply for a job by showing the competencies without paper qualifications.
3. Vocational and Technical Education : by following NVQ L4, L5 course from a TVET registered institution
4. Conversion Programs : IT industry has introduced some conversion programs (example, Trace expert city) to convert non-IT graduates to IT jobs)

Available Training paths

Degree/ Diploma and start with NVQ Level 4

No. of Local Jobs Available (Last Year)

Depends with industry

Regions or countries of job availability

Depends with industry

On the Job Training (OJT)

At the In dusty

For More Information

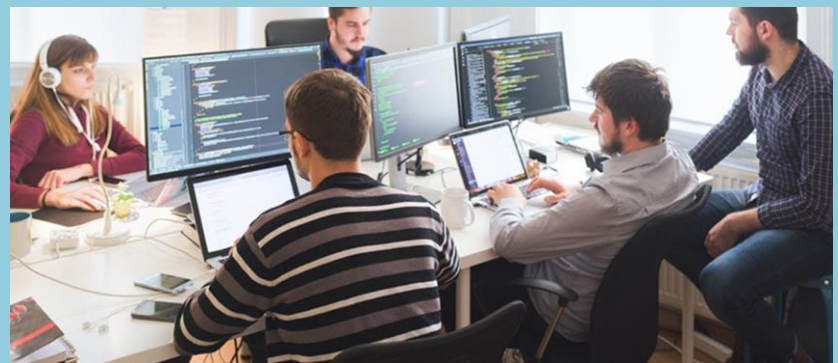
Joint with District CG Centre

Related Occupations

- Software Architect,
- Software Developer,
- Software Development Engineer,
- Software Engineer,
- Technical Consultant
- Associate Software developer
- Computer Programmers
- Software Tester
- QA Engineer
- Application Developer,
- Application Integration Engineer,
- Information Technology Analyst (IT Analyst)

Benefits

- Laptop, phone, devises and accessories
- Incentives and bonuses
- Travelling and meals (Not applicable to all positions)



Occupational Outlook

As the number of people who use this digital platform increases over time, demand for software developers will grow. Systems developers are likely to see new opportunities because of an increase in the number of products that use software. Concerns over threats to computer security could result in more investment in security software to protect computer networks and electronic infrastructure.

Although writing code is not their first priority, 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.

- **Working Conditions**

Occupations that satisfy this work value offer job security and good working conditions. Corresponding needs are Activity, Compensation, Independence, Security, Variety and Working Conditions.

- **Recognition**

Occupations that satisfy this work value offer advancement, potential for leadership, and are often considered prestigious. Corresponding needs are Advancement, Authority, Recognition and Social Status.

- **Achievement**

Occupations that satisfy this work value are results oriented and allow employees to use their strongest abilities, giving them a feeling of accomplishment. Corresponding needs are Ability Utilization and Achievement.

Other important aspects relating to job outlook

- Electronic Mail should be responded everyday
- Spend Time Sitting is high
- Face-to-Face Discussions is important
- Work With Work Group or Team is required
- Being Exact or Accurate is very important

