

Software Engineer's Path

Software Engineer 0 (SE0)

Entry level (Intern) role. A person who has no industry experience and just involved in the software engineering.

Has a desire to learn and grow. Burning from motivation from inside out. Their goal should be to understand the direction they want to take by the end of their internship.

Requirements:

- Strong logical and analytical skills;
- Willingness and initiativeness to solve problems;
- Extreme motivation for professional growth and self-development;
- Ability to convert a decimal number to its binary representation, and hexadecimal;
- Basic English reading skills for technical documentation understanding;
- (optional) Geeky. Eagerness to play around various techs on their free time;
- (optional) Have a favorite programming language;
- (optional) Involvement in one or multiple SE-related educational programs.

General Responsibilities:

- Work on non-mission critical parts of the public projects under strict supervision;
- Take specific educational courses based on the direction they want to take;
- By the end of the internship identify a reasonable path they want to take;
- Showing progress on Codesignal or other similar platforms;
- Daily reports.

Software Engineer 1 (SE1)

A person who already has little experience with software development. Has identified which way they would like to continue in the nearest future. Sees their career in engineering and has a defined set of favorite technologies.

Requirements:

- Minimum of 1 year of experience within the software development domain;
- Knows the basic data structures (Array, List, Linked List, Set);
- Can write at least one sorting algorithm;
- Used a version control system(s) (git - add, commit, push);
- Knows the basic components of computer architecture;
- Knows basics of debugging - can go over the code step by step;
- Took a course or read a book on programming;
- Can read, write and communicate in basic English on technical topics;
- (optional) Preferably has written a code that works in production.

General Responsibilities:

- Work on non-mission critical parts of the private projects under supervision.
- Set professional growth goals with measurable outputs under Mentor's supervision.
- Continuously improve their English skills (written, reading).
- Showing progress on Coursera or other similar platforms.

Software Engineer 2 (SE2)

Requirements:

- Can provide an efficient solution for the unique string counting function;
- Knows how to interact with CLIs (UNIX/Windows/Other) + hands-on experience with SSH;
- Can draft at least one technical architecture/skeleton of the app based on a technical description;
- Solid understanding of debugging principles;
- Tree, Graph data structures;
- BFS, DFS, softing, hashing - all of those should be known and conceptual how they work;
- Solid understanding of Map (Dictionary) data structures;
- Protocols knowledge, including:
 - HTTP protocol (information about headers)
 - HTTP VS HTTPS
 - TCP VS UDP
- Understanding of the REST API.

General Responsibilities:

Everything that SE1 does.

Software Engineer 3 (SE3)

Requirements:

- Writing technical documentation of the project architecture;
- Understanding of the stack specific caching mechanisms;
- Databases - stack specific basic SQL knowledge;
- Ability to conduct autonomous research of new technologies;
- Ability to write automated tests - mostly unit tests;
- Ability to autonomously configure deployment environment, including:
 - Docker
 - AWS
 - NGINX
 - other
- Understanding of the OSI model;
- Basic understanding of the encryption principles;
- Basic understanding of the most common security vulnerabilities in the modern software development systems;
- PUT, POST, GET, DELETE, PATCH methods, and the best practices of using them;
- Strong understanding of the chosen programming stack.

General Responsibilities:

Everything that SE2 does +

- Development of training courses for SE0 level engineers, under the supervision of the Mentors.

Software Engineer 4 (SE4)

Requirements:

- Hands-on experience with software profiling, including such measurements as:
 - Memory usage
 - Memory leaks
 - CPU vs Memory tradeoffs
- Hands-on experience with public-key cryptography (e.g. RSA);
- Strong understanding of the HTTP advanced headers (e.g. ETag);
- Advanced SQL knowledge, including:
 - Indexing optimization
 - Optimal query writing
 - SQL principles
- Strong understanding of algorithms and ability to write and apply them per need;
- Ability to troubleshoot network issues with packet analyzer tools (e.g. Wireshark);
- Understanding of the differences between:
 - Reactive programming
 - Aspect-Oriented Programming
 - Object-Oriented Programming
 - Functional programming
- Ability to write high-quality documentation writing in accordance with OpenAPI standards;
- (optional) Experience in people management.

General Responsibilities:

Everything that SE3 does +

- Mentorship of the lower level engineers of the company (SE1+).

Software Engineer 5 (SE5)

Requirements:

- Can learn a new coding language in a couple of weeks;
- Can come up with a highly efficient solution to any professional challenge, and describe it in written form;
- Familiarity with the CAP theorem;
- Good understanding of databases, including:
 - ElasticSearch
 - Neo4j
 - Cassandra DB
 - MongoDB
 - MariaDB/PostgreSQL
 - Redis
- Good understanding of Message/Queue servers, including:
 - RabbitMQ
 - Kafka.

General Responsibilities:

Everything that SE4 does +

- High availability for any company member's professional questions;
- Professional mentorship, educational guidance, and custom roadmaps implementation for colleagues per need.

Project Team Lead (PTL)

This role is an add-on role to the main specialization. It indicates that the person has advanced managerial responsibilities.

Requirements:

- Minimum SE3 or a member of the QA team;
- Minimum of 1 year working at the SDC;
- Advanced soft skills. Ability to resolve team issues without the emergence of conflicts;
- Proven record of successfully deployed and released projects.

General Responsibilities:

- Overseeing for the technical implementation of assigned projects;
- Overseeing high-level architecture of assigned projects;
- Overseeing the essential activities of the project delivery (incl. Code freeze announcements, DEMO-related preparations, etc.);
- Technical estimates preparation per higher management's request;
- Participating in coding/QA/OPS activities per need.

Chief Engineer

Requirements:

- Minimum of 8 years of industry experience;
- Minimum of Bachelor's degree in Computer Science, Physics, Math or related field (STEM);
- English language - candidates should be able to freely communicate about the work in both, written and verbal form;
- Works at the SDC for at least 2 years;
- Successfully delivered multiple projects from concept to shipping acting as a Teamlead;
- At least four years of experience in working as Teamlead on enterprise-level software projects;
- Multi-domain technical background. The following is the list of tech stacks the company operates with; an ideal candidate will have to have hands-on experience with all of the technologies below:
 - Java 8/11, JavaScript (browser+NodeJS), C#, Bash, Makefile
 - ElasticSearch, Cassandra, Kafka, Redis, Neo4j, MariaDB, MSSQL, Oracle
 - Spring Framework, Electron, Apache Camel, Spark, gRPC
 - Docker, Kubernetes
 - CentOS, Ubuntu, Windows Server
 - Programming on Android and iOS platforms

General Responsibilities:

Everything that SE5 and Team Lead does +

- Technical leadership of the projects from concept to shipping, including:
 - Project architecture creation
 - Resource calculation and allocation
 - Overseeing the progress
 - Project risk management
 - Deployment coordination
 - DEMO production per need
- Creation and maintenance of software engineering processes and good practices;
- Resolution of tech disputes and decision making for the tech stack to be used;
- Tech-related sync across different teams working on the same project;
- Tech documentation of the project;
- Daily communication of technical matters with the clients, partners, and 3rd-party providers;
- Daily work with management for timely delivery of the projects.