# OCCUPATIONAL QUALIFICATION STANDARD
## Junior Software Developer, EstQF Level 4

An occupational qualification standard is a document which describes the set of skills, knowledge and attitudes, i.e. competence requirements, needed to successfully accomplish duties. Occupational qualification standards are used for compiling curricula and awarding qualifications.

| Occupational title | Level of Estonian Qualifications Framework (EstQF) |
|---|---|
| Junior Software Developer, EstQF Level 4 | 4 |

**Part A**
**DESCRIPTION OF WORK**

| A.1 Description of work |
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| The main task of Junior Software Developer, Level 4 is to write software source code according to developed and agreed architecture and designs. They participate in the design of the system and propose various technical solutions, taking into account the system as a whole. Their main tasks are product or project design, application planning, design and development, system integration, testing, solution deployment and documentation. They are able to locate inconsistencies in the task, provide analysts with input to clarify the task and provide testers with input to test changes and developments. <br><br> Junior Software Developer, Level 4 works in a team and solves tasks independently, understanding and applying the team's software development methodology. <br><br> Junior Software Developer's work requires analytical and creative technical thinking and continuous professional development. They must understand the interaction between the various system components and be able to take this into account when making changes and developments. Junior Software Developer's work requires good teamwork skills. <br><br> The European ICT Competence Framework (e-CF), which defines a total of 40 e-CF main competences, is the basis for describing ICT occupations. |

| A.2 Tasks |
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| 1. Product/service planning (e-CF competence A.4) <br> 2. Application design (e-CF competence A.6) <br> 3. Technology trend monitoring (e-CF competence A.7) <br> 4. Design and development (e-CF competences B.1 & B.2) <br> 5. Testing (e-CF competence B.3) <br> 6. Solution implementation/installation/adoption (e-CF competence B.4) <br> 7. Documentation production (e-CF competence B.5) |

| A.3 Work environment and specific nature of work |
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| Junior Software Developers work indoors, mainly seated. The risk factors of the working environment are forced positions and working in front of a screen. |

| A.4 Tools |
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| Junior Software Developer's main tools are computing technology and software. |

| A.5 Personal qualities required for work: abilities and characteristics |
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| The work of a Junior Software Developer requires logical and analytical thinking and technical creativity. Willingness to learn, cooperation, adaptability, communication, orientation towards results, responsibility, punctuality, accuracy, self-discipline and stress tolerance are important. |

| A.6 Professional preparation |
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| Junior Software Developer, Level 4 usually has specialised vocational education, applied higher education or higher education. In exceptional cases, vocational skills may be acquired through further training, at the workplace or by studying independently. |

| A.7 Most common occupational titles |
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| Junior software developer, junior programmer. |

# Part B
## COMPETENCY REQUIREMENTS

| B.1 Structure of occupation |
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| All competences must be certified when applying for the qualification of Junior Software Developer, Level 4. |

| B.2 Competences |
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## MANDATORY COMPETENCES

| B.2.1 Product/service Planning (e-CF competence A.4 ja E.2) | EstQF Level 4 |
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| Tegevusnäitajad<br>1. Teeb koostööd kliendiga projekti kavandamiseks vajaliku sisendi, aja ja muude ressursside vajaduse kaardistamise protsessis.<br>2. Osaleb tehnoloogiate ja töövahendite valiku protsessis.<br>3. Optimeerib projekti kulud ja väldib ressursside raiskamist keskendudes projekti vaates olulisele. | |

| B.2.2 Application design (e-CF competence A.6) | EstQF Level 4 |
| --- | --- |
| Tegevusnäitajad<br>1. Osaleb rakenduse planeerimisel, lähtudes projekti funktsionaalsetest ja mittefunktsionaalsetest nõuetest (sh jõudlus, hooldatavus, laiendatavus, mastaabitavus, kättesaadavus, turvalisus ja juurdepääsetavus).<br>2. Kasutab oma töös prototüüpimisest ja testimisel saadud sisendit.<br>3. Osaleb kasutajaliidese kavandamisel. | |

| B.2.3 Technology trend monitoring (e-CF competence A.7) | EstQF Level 4 |
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| Performance indicators:<br>1. keeps up to date with the latest technological achievements in ICT using relevant information sources. | |

| B.2.4 Tarkvarasüsteemi realiseerimine (e-CF kompetents B.1. ja B.2) | EstQF Level 4 |
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| Tegevusnäitajad<br>1. Hindab olemasolevate piirangutega kooskõlas oleva ning vastuvõtutingimustele vastava lahenduse realiseeritavust.<br>2. Loob töötavat tarkvara, järgides parimaid praktikaid ja lähtudes vastuvõtu tingimustest.<br>3. Teostab lihtsamaid liidestusi.<br>4. Kasutab ja parendab olemasolevat lähtekoodi.<br>5. Kasutab arendusvahendeid ja versioonihaldussüsteeme eesmärgipäraselt ja efektiivselt. | |

| B.2.5 Testing (e-CF competence B.3) | EstQF Level 4 |
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| Tegevusnäitajad<br>1. Kirjutab (automaat) teste enda poolt loodavale ja muudetavale koodile.<br>2. Testib enda loodud ja muudetud tarkvarakomponentide funktsionaalsust ning nõuetele vastavust, kasutades sobivat ja efektiivset testimise metoodikat. | |

| B.2.6 Solution implementation/installation/adoption (e-CF competence B.4) | EstQF Level 4 |
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| Tegevusnäitajad | |

| 1. Tagab, et loodud tarkvarakomponendid on integreeritavad ja paigaldatavad järgides pideva integratsiooni ja -tarne printsiipe;<br>2. Paigaldab loodud tarkvarakomponendid nõutavasse keskkonda vastavalt ettevõttes kasutatavale reliisiprotsessile;<br>3. Osaleb juurutusprotsessis. | |
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| **B.2.7 Documentation production (e-CF competence B.5)** | **EstQF Level 4** |
| Tegevusnäitajad<br>1. Tagab dokumentatsiooni olemasolu ja ajakohasuse kogu projektis osalemise jooksul.<br>2. Dokumenteerimisel lähtub üldlevinud parimatest praktikatest (sh programmeerimiskeelte dokumenteerimisstandardid ja vahendid) ja ettevõttes kehtestatud nõuetest. | |

## RECURRING COMPETENCES

| **B.2.8 Recurring competences of Junior Software Developer** | **EstQF Level 4** |
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| Performance indicators:<br>1. understands their role and influence on the company's performance;<br>2. participates in teamwork and supports the team's effective performance;<br>3. communicates with colleagues and customers politely, choosing the type of behaviour and expression appropriate to the situation;<br>4. participates in knowledge management processes and shares best practice; is capable of objectively and unambiguously informing parties regarding the course of the work;<br>5. their work is guided by ethical principles, separating their personal interests from those of the organisation;<br>6. complies with information security principles and reports potential security incidents; is aware of the organisation's information security policy and its impact on customers, suppliers and subcontractors;<br>7. uses at least one mainstream programming language at a level that enables them to independently read existing code and create new code;<br>8. has knowledge of the software's legal framework, including a variety of software licences;<br>9. monitors the implementation of the organisation's quality policy and provides relevant information;<br>10. presents written materials that are structured, logical and linguistically accurate;<br>11. speaks Estonian at the B2 level and English at the B1 level (see Annex 1). | |
| Recurring competences are evaluated as part of the assessment of the other competences listed in the occupational qualification standard. | |

## Part C
## GENERAL INFORMATION AND ANNEXES

| **C.1 Information concerning compilation and certification of occupational qualification standard and reference to classification of occupations** | |
|---|---|
| 1. ID of occupational qualification standard in register of occupational qualifications | 08-13112018-1.2/6k |
| 2. Occupational qualification standard compiled by: | Andres Ojalill, Tallinna Polütehnikum<br>Raul Pärnsalu, Playtech Estonia OÜ<br>Villu Teearu, Elisa Eesti AS<br>Heiki Tähis, AS Atea<br>Merje Vaide, BCS Koolitus AS |
| 3. Occupational qualification standard approved by: | Information Technology and Telecommunication |
| 4. No. of decision of Sectoral Council | 12 |
| 5. Date of decision of Sectoral Council | 13.11.2018 |
| 6. Occupational qualification standard valid until | 02.11.2023 |
| 7. Occupational qualification standard version no. | 6 |

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| 8. Reference to International Standard Classification of Occupations (ISCO 08) | 2519 Software and Applications Developers and Analysts Not Elsewhere Classified |
| 9. Reference to European Qualifications Framework (EQF) | 4 |
| **C.2 Occupational title in foreign language** | |
| English: | Junior Software Developer, EstQF Level 4 |
| **C.3 Annexes** | |
| Lisa 1 Language skills level descriptions | |