SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY SKILLS MAP – FULL STACK DEVELOPER		
Sector	Infocomm Technology	
Track	Product Development	
Sub-track	Software Development	
Occupation	Software Developer	
Job Role	**Full Stack Developer**	
Job Role Description	The Full Stack Developer codes and develops both front-end and back-end systems that balance product functionality with user experience and needs. He/She gathers user feedback to develop an intuitive and responsive experience for end users. He identifies security risks and ensures coding standards meet security requirements. He supports usability testing to validate user interfaces. He executes specifications and features for the next iteration of the product based on user needs and feedback, and continuously integrates code changes. He provides support to the quality testing teams. He works in a team and is proficient in programming languages required by the organisation. He is familiar with graphic designing tools and is also knowledgeable in commonly used design methods. He uses various tools to read codes and uncover security vulnerabilities. The Full Stack Developer is innovative in developing a range of product designs and solutions with compelling and intuitive user interfaces. He supports others in the team and is confident in communicating ideas to the team in a clear and compelling manner.	
Critical Work Functions and Key Tasks	**Critical Work Functions**	**Key Tasks**
	Understand technical specifications required by the business	Participate in discussions with stakeholders to understand user requirements
		Write technical requirements and specifications
		Execute software requirement specifications
		Recommend approaches that balance security, stability, and performance needs
		Support team with technical guidance on proposed solutions and alternatives
	Manage the back-end design of software	Develop scalable front-end, back-end, and integration components of the product
		Collaborate with stakeholders to build and improve new and existing products
		Deliver high quality, maintainable, and scalable codes
		Execute improvements to both front-end and back-end systems
		Use simulation and prototypes to evaluate software design quality
		Partner the Site Reliability Engineering teams to develop reliable and scalable products
		Partner business teams to align products with business goals and objectives
		Perform code re-factoring
	Perform software testing	Perform integration testing as part of the integration process
		Write unit tests for delivered codes
		Support final pre-release testing activities involving stakeholders
		Write success and failure criteria for unit and integration testing
		Execute the test environment and test case scenarios to ensure software resilience
		Specify test cases for the selected testing techniques including clean coding
		Gather defect arrival rate and failure intensity data
		Identify potential defects in software through testing

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	Manage software configuration management (SCM)	Execute the SCM plan
		Assist in specifying the SCM measures to be used
		Support the development of tools for generating SCM audit reports
		Perform product readiness review in software configuration management
		Execute the building, verification, and implementation of software releases
		Support the procurement of SCM tools
		Maintain mechanisms for recording and reporting SCM information
		Ensure the execution and documentation of approved changes
	Oversee security provisions in software	Follow recommended coding standards and secure-coding principles to avoid security vulnerabilities
		Adhere to project standards in the collection of security assessment metrics
		Perform code reviews to identify security vulnerabilities
		Use security tools to identify and address security vulnerabilities
		Support threat modelling to identify and mitigate security risks
		Identify the attack surface of new and modified systems

Skills and Competencies

Technical Skills and Competencies		Critical Core Skills	
Agile Software Development*	Level 4	Communication	Intermediate
Applications Development*	Level 4	Creative Thinking	Intermediate
Applications Integration*	Level 4	Learning Agility	Intermediate
Applications Support and Enhancement*	Level 3	Problem Solving	Intermediate
Business Needs Analysis*	Level 3	Self Management	Basic
Configuration Tracking*	Level 3		
Continuous Integration and Continuous Deployment*	Level 4		
Data Design*	Level 4		
Quality Standards*	Level 5		
Service Level Management*	Level 4		
Software Configuration*	Level 3		
Software Design*	Level 4		
Software Testing*	Level 3		
System Integration*	Level 3		
User Interface Design*	Level 3		
Business Environment Analysis	Level 2		
Business Requirements Mapping	Level 3		
Business Risk Management	Level 3		
Change Management	Level 3		
Cloud Computing	Level 3		

	Database Administration	Level 2	
	Emerging Technology Synthesis	Level 3	
	Performance Management	Level 4	
	Problem Management	Level 3	
	Product Management	Level 3	
	Project Management	Level 3	
	Test Planning	Level 2	
Programme Listing	For a list of Training Programmes available for the ICT sector, please visit: www.skillsfuture.sg/skills-framework/ict		

The information contained in this document serves as a guide.

*Note: Technical Skills and Competencies (TSCs) with an asterisk (*) refer to Priority Skills (i.e., TSCs to be prioritised for this role).

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