

**SKILLS FRAMEWORK FOR FINANCIAL SERVICES
TECHNICAL SKILLS AND COMPETENCIES (TSC) REFERENCE DOCUMENT**

TSC Category	Data Analytics and Information Technology Management					
TSC	Programming and Coding					
TSC Description	Develop technical capabilities to understand, design and write instructions to be processed by computers as software programmes to achieve desired outcomes					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
			FSE-DIT-3018-1.1	FSE-DIT-4018-1.1		
			Analyse business objectives to identify programming and coding opportunities, to ensure that the technical functionality of software designed is aligned to intended outcomes	Translate business requirements into programming and coding requirements, and design guidelines for the formulation of programmes and codes		
Knowledge			<ul style="list-style-type: none"> • Programming and coding languages, logics and styles • Business requirements and objectives • Problem-solving and error handling techniques • Algorithm and data structures • Scripting approaches • Code management approaches • Knowledge of codes, systems and platform layouts • Organisation's strategic objectives and processes 	<ul style="list-style-type: none"> • Business requirement analysis and mapping tools and/or techniques • Team, departmental and organisational goals and strategic direction setting approaches • Coding and code database organisation methodologies • Information gathering and questioning techniques • Trends and developments relating to programming and coding 		
Abilities			<ul style="list-style-type: none"> • Analyse and translate business requirements of software into multiple functions • Write programmes and codes that are aligned with business requirements 	<ul style="list-style-type: none"> • Gather and interpret business requirements of software through business use cases • Review and propose overall coding best practices to guide individuals in executing coding 		

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			<ul style="list-style-type: none"> • Draft and design overall coding frameworks as a guide for organising codes • Select appropriate programming languages for business use cases • Code solutions using required programming languages • Assess written codes to identify errors and gaps to be addressed • Test and debug codes to ensure workability • Incorporate improvements and make corrections to programmes and codes to achieve desired outcomes • Document programming and coding updates and changes for business and technical professionals 	<ul style="list-style-type: none"> • Review and detect errors and areas for improvement within written codes and communicate accordingly • Test completed codes to identify gaps and possible improvement areas • Manage programming and coding activities and monitor outputs • Group coding outputs using a systematic approach • Ensure programming and coding documentation is accurate and complete 		
<p>Range of Application</p>	<p>Types of programming and coding languages may include, but are not limited to:</p> <ul style="list-style-type: none"> • Python • Java • JavaScript • SQL • C++ • C# • Ruby • Linux Shell 					