### 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

<table>
<thead>
<tr>
<th>TSC Proficiency Description</th>
<th>Level 1</th>
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<td>Analyse business objectives to identify programming and coding opportunities, to ensure that the technical functionality of software designed is aligned to intended outcomes</td>
<td>Translate business requirements into programming and coding requirements, and design guidelines for the formulation of programmes and codes</td>
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### Knowledge
- 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
- 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
- Analyse and translate business requirements of software into multiple functions
- Write programmes and codes that are aligned with business requirements
- Gather and interpret business requirements of software through business use cases
- Review and propose overall coding best practices to guide individuals in executing coding
<table>
<thead>
<tr>
<th>Range of Application</th>
<th>Types of programming and coding languages may include, but are not limited to:</th>
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<tbody>
<tr>
<td></td>
<td>• Python</td>
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<td>• Java</td>
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<td>• C#</td>
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<td>• Ruby</td>
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<td>• Linux Shell</td>
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- 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
- 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