SKILLS FRAMEWORK FOR MEDIA
SKILLS MAP - JUNIOR PROGRAMMER

Sector	Media
Sub-sector	Games
Track	Game Technical Development
Sub-track	Game Programming
Occupation	Game Programmer

Job Role	**Junior Programmer**
Job Role Description	The Junior Programmer writes programming code that runs and controls the game, incorporating and adapting any ready-made code libraries, along with the creation of custom code as required. He/She performs code testing and bug fixes, as well as creation of customised tools for use by other members of the development team. He works closely with the artists, designers and programmers to write code for all aspects of the game to create high quality outcomes. The work involves delivering technical outcomes in individual capacity. He spends most of his working time involved in programming in the game studio and attends meetings with other production teams regularly. He is systematic, organised and is able to work on his own initiative and as part of a team. He should be a creative thinker and a problem solver in order to deliver his responsibilities effectively.

	Critical Work Functions	**Key Tasks**
Critical Work Functions and Key Tasks	Plan game development	Participate in discussions with stakeholders to understand the requirements and technical specifications for the game
		Contribute inputs for the modification of initial game designs and concepts from the perspective of technical implementation
		Contribute inputs for detailed technical design documents designed for game elements
		Create initial prototypes to demonstrate gameplay ideas and features
		Research to identify new technologies and programming practices that may aid game development
	Execute game development	Develop the logic for the game mechanics to achieve the objectives of game design
		Write programming code for user interface, artificial intelligence (AI), sound, physics and gameplay and any other technical aspects of the game as required
		Support the development of various builds and versions of the game until the game release
	Optimise game development	Debug identified issues for program to run smoothly
		Optimise game play coding and ensure that game runs with good performance by working together with internal teams
		Adhere to the given performance and memory budgets stipulated by engine programming teams
		Keep up to date on latest technologies and programming practices for games
	Execute tools design and development	Collaborate with artists, designers and programmers to understand how to best utilise existing tools and technology
		Contribute to the development of high level design documents for the tool requirements
		Create low-level design documents to clarify coding requirements and present to team leads for review
		Develop allocated parts of the overall code for tool design
		Refine code with inputs from team lead / senior
		Execute the creation, maintenance and update of technical documentation pertaining to tool design
	Execute testing and implementation of tools	Perform iterative testing and debugging of code developed for the tool design
		Execute implementation of developed tools within existing workflows in collaboration with the end-user teams
		Train end-user teams to understand the capabilities and functions of the new tools
		Conduct regular maintenance and debugging of tools for performance, stability and usability
		Provide support to tools users to troubleshoot and resolve pipeline issues
		Analyse and fix common problems in tools and engines such as load times, memory usage and performance problems
	Manage the game release and maintenance	Implement changes in patches and further releases based on feedback from community managers and player reactions to improve game features
		Write code to develop software patches and updates after release of the game
		Write code to port game to other platforms

Skills and Competencies	Technical Skills and Competencies		Generic Skills and Competencies (Top 5)	
	Audio Programming	Level 2	Problem Solving	Basic
	Database Administration	Level 2	Computational Thinking	Basic
	Game Artificial Intelligence Development	Level 2	Communication	Basic
	Game Level Development	Level 2	Teamwork	Basic
	Game Networking	Level 2	Creative Thinking	Basic
	Game Porting	Level 2		
	Game Server Programming	Level 2		
	Game User Interface Development	Level 2		
	Gameplay Development	Level 2		
Programme Listing	For a list of Training Programmes available for the Media sector, please visit: www.skillsfuture.sg/skills-framework/Media			

The information contained in this document serves as a guide.