

<b>SKILLS FRAMEWORK FOR MEDIA SKILLS MAP - LEAD GAME PROGRAMMER</b>		
<b>Sector</b>	Media	
<b>Sub-sector</b>	Games	
<b>Track</b>	Game Technical Development	
<b>Sub-track</b>	Game Programming	
<b>Occupation</b>	Game Programmer	
<b>Job Role</b>	<b>Lead Game Programmer</b>	
<b>Job Role Description</b>	<p>The Lead Game Programmer oversees the overall programming aspects in a game development project. He/She manages the technical development of a game from start to finish. In conjunction with other key team leads, he develops the technical specifications for the game and delegates different aspects to a team of programmers. He oversees the development or customisation of game engines to meet the development needs of the game. He integrates all the technical documentation for the codes produced by the programming team and ensures quality, effectiveness and appropriateness of all the game code. He is also responsible for the project management of the code development process and ensures that team members deliver the requested codes on time and within budgets.</p> <p>He is often involved in project team meetings and reviewing project progress. The work also involves liaising with key internal and external stakeholders to achieve project objectives. He can be expected to work long hours to deliver against project milestones.</p> <p>He is a technical expert across multiple aspects of game development and an effective project manager. He has the ability to communicate with people across the levels within the organisation and has an eye for detail. He also has the ability to guide teams and individuals from a technical as well as developmental perspective.</p>	
<b>Critical Work Functions and Key Tasks</b>	<b>Critical Work Functions</b>	<b>Key Tasks</b>
	Plan game development	Evaluate game features provided by game designers to ensure that they are within the technical feasibility required by target platforms and/or engines
		Develop detailed technical documentation of the game
		Provide technical advice to the development of overall game design and game concept
		Review the overall technical specification of the game development
		Develop coding standards for game development
		Develop budgets, production plans and milestones for specific elements in the games
	Design game engine	Define the technical objectives and product roadmap for the game engine
		Ideate with technical teams on high level engine design and specifications
		Ideate new features and modules for existing engines based on project requirements or to support development of newer games
		Review engine architecture and revise accordingly based on technical objectives and resource considerations
	Execute game development	Drive innovation by evaluating and introducing new technologies and programming practices for games
		Develop best practices for game development to ensure codes are bug free and comply with security specifications
		Assign the development of programming elements to appropriate teams
		Oversee the development of the different 'builds' of the game and successive versions supported by a detailed project plan
		Review game and engine programming code against guidelines provided by engine teams to ensure stability and security of games
		Oversee prototyping and iterative development of core engine modules
		Oversee testing of engine modules and sub-systems to ensure reliability of build systems for game releases
	Optimise game development	Drive enhancements to engine modules to ensure optimal performance of game across target hardware platforms
		Work with existing engine code base to develop and enhance game play including player world interaction, artificial intelligence (AI) strategies and rules, game play
Guide game programmers to deliver the vision of the design team to create immersive and compelling gameplay experiences in a timely manner and to a consistent high quality standard		
Manage the game release and maintenance	Work with the quality assurance team to enhance testing procedures	
	Oversee the integration of localised assets, components and features into various game builds, to meet the requirements for various regions	
	Oversee the continuous maintenance, iterations and addition of new features	
		Oversee development of software patches, expansion of games via update including extra features or content that may alter gameplay

	Manage projects	Drive project to meet schedules, manpower and technical quality targets			
		Collaborate with various teams in game design, technical art and others to ensure cohesive development of the game			
		Collaborate with users, technical staff and management to determine and resolve issues associated with project implementation			
		Conduct regular project reviews to recommend schedule changes, cost or resource adjustments			
	Manage teams and/or departments	Communicate common goals, direction and accountability among staff			
		Develop staff by ongoing coaching, mentoring and career discussions			
		Exhibit effective performance management practices within department in accordance with organisational policies and procedures			
		Monitor budgets, forecasting, work allocations and staffing of the various departments			
<b>Skills and Competencies</b>	<b>Technical Skills and Competencies</b>		<b>Generic Skills and Competencies (Top 5)</b>		
	Audio Programming	Level 4	Leadership	Advanced	
	Database Administration	Level 4	Communication	Advanced	
	Game Analytics	Level 4	Decision Making	Advanced	
	Game Artificial Intelligence Development	Level 4	Computational Thinking	Advanced	
	Game Engine Development	Level 4	Resource Management	Intermediate	
	Game Level Development	Level 4			
	Game Networking	Level 4			
	Game Physics Development	Level 4			
	Game Porting	Level 4			
	Game Server Programming	Level 4			
	Game Testing Automation	Level 4			
	Game User Interface Development	Level 4			
	Gameplay Development	Level 4			
	Tools Development	Level 4			
<b>Programme Listing</b>	For a list of Training Programmes available for the Media sector, please visit: <a href="http://www.skillsfuture.sg/skills-framework/Media">www.skillsfuture.sg/skills-framework/Media</a>				

The information contained in this document serves as a guide.