# Assessment event 1 of 3: Skills

## Criteria

### Unit code and name

ICTPRG434 | Automate processes

ICTGAM423 | Apply artificial intelligence in game development

### Qualification/Course code and name

ICT40120 CERT IV in Information Technology Game Development

## Student details

Student name

Student number

Version: 2023092023

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## Assessment instructions

Table 1 Assessment instructions

| Assessment details | Instructions |
| --- | --- |
| **Assessment event overview** | The objective of this assessment is to assess your knowledge and performance in introductory programming tasks using an object-oriented programming language including tool usage, documentation, debugging, and testing techniques.  Write scripts to automate solutions by using basic scripting processes and application-specific scripting options.  Identify, evaluate and incorporate pre-existing (re-use) components from a library, or other source, as part of a software project.  Research, develop and implement artificial intelligence (AI) solutions in games.  This assessment is in 3 parts:   * Part 1: Pathfinding maze for Unity AI Agents * Part 2: TDD |
| **Unit assessment guide** | Refer to the unit assessment guide (UAG) before attempting this assessment event. The UAG contains information including assessment requirements and how to achieve a satisfactory result. |
| **Submission instructions** | When you complete this assessment:   * read the checklist at the end of the assessment to make sure you have completed everything * keep a copy of all the electronic and hardcopy assessments you submit to TAFE NSW * make sure you have completed the assessment declaration before you submit. |

## Task instructions

The assessor will use the criteria outlined in the following tasks to determine if you have satisfactorily completed this assessment event. Follow these instructions to ensure you demonstrate the required knowledge and skills.

## Part 1: Pathfinding maze for Unity AI Agents

Design and implement a pathfinding maze for Unity AI Agents. The game should include the following elements:

1. Pathfinding: Create a maze environment for use with Unity’s Component pathfinding system.
2. Agent Variations: Introduce at least three types of agents with distinct movement patterns and different assigned waypoints. Each agent should navigate the maze independently.
3. Dynamic Maze: Incorporate at least two doors within the maze that open and/or close, altering the available paths between waypoints. The changing maze should require agents to change their path.
4. Area Modifiers: Implement different area modifiers within the maze that affect agents.
5. Nav Mesh Link: Create a gap between two points on the map and implement a nav mesh link to bridge the gap.
6. Collectables: Introduce at least two types of "collectables" within the maze, such as keys and coins/treasure.

If there was any issues with your game after submission you will be given feedback. It will identify any areas not covered or covered incorrectly by your code. Please amend any omissions and errors and resubmit.

Ensure you have debugged your code with no syntax and semantic errors in your code.

## Part 2: TDD

Using the template provided create a simple Technical Design Document (TDD) for your project in part 1.