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| **Qualification details** | | | |
| **Training Package Code and Title:** | **ICT - Information and Communications Technology (Release 8.0)** | | |
| **Qualification National Code and Title:** | ICT40120 – Certificate IV in Information Technology (Gaming Development) | **State code:** | BFF9 |

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| **Assessment Title** | **AT02 Mobile Game Character** | | |
| **Unit National Code & Title** | ICTGAM428 Create 3-D characters for interactive games | | |
| ICTGAM431 Design and create 3-D digital models | | |
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| **Date Due** | ***24/04/2023*** | **Date Received** | ***28/02/2023*** |

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| **Student Name** |  | **Student ID** |  |
| **Student Declaration** | I declare that the evidence submitted is my own work:  ………………………………………….. | | |

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| **Assessor Name** |  | | | |
| **Assessment Decision** | Satisfactory | | Not Yet Satisfactory | |
| **Assessor Signature** |  | | **Date** |  |
| **Is student eligible for reassessment (Re-sit)?** | No | Yes | **Reassessment Date:** |  |

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| **Feedback to student** | | | |
| *Via Blackboard (LMS) – Please check [Grade] section.* | | | |
| **Feedback from student** | | | |
| *Via Blackboard (LMS) – Please use [Comment] section during submission.* | | | |
| **Student signature** |  | **Date** |  |

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| **Assessment Instructions** |

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| **TO THE ASSESSOR** | |
| Type of Assessment | *Project* |
| Duration of Assessment | *7 Class Sessions (Week 5 - 12)* |
| Location of Assessment | *Classroom, at home* |
| Conditions | *Assessor to ensure that the noise levels, natural interactions and time variances are maintained as it would in the be in the Cyber Security industry.*  *Learners are required to complete the required tasks in class and submit the required documentation electronically via Blackboard*  This includes access to:   * *required hardware and software.* * *required industry standard 3-D modelling software and features.* * *a range of industry standard delivery platforms* * *client specification documentation* * *reference materials applicable to design and visualisation of 3-D models* * *file storage* * *3-D product modelling software and delivery platforms.* * *games engine* * *character reference materials including models, illustrations, art and design books and character photographs.* * *a range of industry standard games, across all platforms and genres* * *a range of industry standard consoles and hand-held game devices.*   *Learners are required to complete the required tasks in class and submit the required documentation electronically via Blackboard.*  *The scenario for assessments is set within a simulated studio context (Immersive Studio’s) The* lecturer takes on the role of a studio head and the lecturer must have full access to the project management system Hack n Plan and all the students’ projects. |
| Elements and Criteria | As detailed in the assessment plan  You are required to make sure that all students meet the elements, performance criteria and oral communication items as outlined in the provided checklist. |

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| **TO THE STUDENT** | |
| Purpose of Assessment | You are required to show you can:  ICTGAM428:   * Identify and discuss character requirements and designs * Design characters   Develop character models  ICTGAM431   * Identify and clarify work requirements * Design 3-D digital models * Create 3-D digital models * Finalise 3-D digital models   You are required to meet the elements, performance criteria and oral communication items as outlined in the provided checklist. |
| Allowable Materials | Blackboard (Topic by topic) will include the following: Weekly Readings, Class notes, and Weekly Activities. |
| Required Resources | *Computer with:*   * *Internet Access* * *Word processing software* * *Access to Learning Management System (LMS)* * *Blender 4.0+* * *Hard drive* |
| Reasonable Adjustment | In some circumstances, adjustments to assessments may be made for you. If you require support for literacy and numeracy issues; support for hearing, sight or mobility issues; change to assessment times/venues; use of special or adaptive technology; considerations relating to age, gender and cultural beliefs; format of assessment materials; or presence of a scribe you need to inform your lecturer. |
| Assessment Submission | *All questions and activities must be attempted.*  *Use of research tools and peers in formulating answers are acceptable – but work submitted must be your own work.*  *Final project documentation is to be uploaded to the appropriate area in the Blackboard course created for this unit.*  *If you are marked as NYS (Not Yet Satisfactory) on your first attempt, you will be provided with another opportunity to re-attempt the assessment.* |
| Project contents | This project consists of the following tasks:   * Read and analyse the provided client brief detailing the available factions, character roles, archetypes and game mechanics * Choose an in-game faction from the provided client brief, a role, and archetype * Begin researching, brainstorming and planning the design for a character which will fit in with the existing game described by the provided client brief * Interpret the chosen role, type, and mechanics (character abilities) through the visual and narrative design of an original character * Perform focus testing and acquire feedback on the concept for the original character, and update design as required * Confirm technical design of the proposed character conforms with the guidelines and restrictions detailed in the provided client brief * Create a prototype version of the character and accompanying props, including textures, rigging and required animations * Present prototype for feedback, note required/suggested changes and plan for improvements for second pass * Complete second pass of model including textures, rigging and animations * Finalize character model and export as game-ready asset |

# Scenario & Summary

Your task is to create a new character for the mobile game *Shadowraid: TACTICS* as part of the upcoming update to the game.

You will need to come up with your own concept and design for a hero, choosing from one of the available ‘factions’ in the game.

Your design will need to meet the technical specifications and fit with the style guides for both the game as a whole and the chosen faction.

You will also be responsible for some of the mechanical design of your hero. You will need to choose the *archetype* and *role* for the hero from the *Shadowraid: TACTICS* design guide.

Each hero in *Shadowraid: TACTICS* has a selection of four abilities which the player can use during gameplay. The narrative, visual and thematic design will be up to you, but the broader mechanical aspects of the abilities must be aligned to the templates provided in the *Shadowraid: TACTICS* design guide.

Each ability will need to be chosen from one of the available ability categories, and should fit with the chosen archetype and role for the character.

Following this process you will then have the opportunity to 3d model, texture, and animate your hero and have it added to the roster of *Shadowraid: TACTICS*.

# Part 1 – Concept, Design and Clarifying Work Requirements

## Task 1 – Identify and clarify requirements of project

Unlike your previous character design task this project presents you with a much more active role in the mechanical design of the character. As an ongoing game project with frequent updates adding in new characters and campaigns *Shadowraid: TACTICS* relies heavily on visual design cues on heroes to indicate the type of character, their various abilities and skills, and the faction that they belong to.

*A character suited to a 'front-line tank' role who inflicts moderate damage, for instance, will tend towards a large, bulky and well-armoured design with a relatively mundane looking weapon. Whereas a sneaky flanking character designed to ambush other heroes and inflict large amounts of burst damage would be smaller and lightly armoured, with a weapon or magical abilities that convey the impression of large amounts of damage in a single hit.*

As such you will need to ensure that you are familiar with not just the visual style and technical requirements of the game's models and animation, but also the gameplay itself.

* Begin by reading through the *Shadowraid: TACTICS* design guide.   
    
  Identify the technical requirements for characters being designed for *Shadowraid: TACTICS*, including:
  + Visual style (eg low-poly, cartoon, realistic…)
  + Model scale
  + Asset naming conventions
  + File formats
  + Polycount
  + Topology

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* Using the *Shadowraid: TACTICS* design guide identify the context of the interactive game which your hero's design will need to adhere to, including:
  + Genre and overall gameplay loops of the game
  + Movement, combat, healing and 'ability' mechanics
  + From the above point, consider and list the minimum number of animations that the hero will need

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## Task 2 - Brainstorm & Generate Concept for Character

Now that you have identified the overall requirements for the hero you will be designing, it's time to begin brainstorming ideas for your character and generating concept art for later steps.  
  
For the next steps you will need to use the *Shadowraid: TACTICS Character Template* document to record the majority of your work.

* Choose from the available factions in the game and begin generating ideas for your hero’s story: their background/origin, style and role within the broader narrative of the game.

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* Determine the character’s archetype and role within the game and begin brainstorming the abilities that the character will have base on the chosen archetype and role combination.
  + Utilize the ability templates – for example, selecting a ‘Ranged Support (buff)’ ability
  + Determine how this ability is then represented according to the character’s visual and narrative design. How would an Orcish Support Caster provide a range support buff to their allies vs an Elf Tank Fighter? Would it be a buff to their offensive abilities or to their defences?

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* Now that you have an idea of 'who' your character is within the narrative of the game world, and have begun to brainstorm ideas for how they will function mechanically, you can begin visualizing how they might look. Begin generating a visual reference by gathering reference materials for your character and create a mood board.

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* Once the mood board is complete you can start to generate concept art to refer to while modeling, texturing and animating your character.  
    
  You may use the most suitable method for creating the concept art based on your own artistic abilities and resources.   
    
  If you are confident drawing with either physical art tools, or with digital tools, you may do this.  
    
  Otherwise you may employ methods such as Photoshopped amalgamations of reference images, AI art based sketches\*, or online tools for creating simple character using templates such as *HeroForge* or *beneverending  
    
  \*Note: As stated above, the use of AI tools should be discussed with your lecturer. In this case the recommended workflow is to use any AI art as a 'base' for your character and then use Photoshop/Illustrator tools to 'sketch' or 'trace' over the art to make it your own.*

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## Task 2 - Perform Focus Testing & Determine Required Changes

Once your initial draft of the *Character Template* is complete you should seek out feedback and critique from your peers by conducting focus group testing of your character design.

* Organize a group of at least 3 focus group participants. Provide them with a short document explaining the purpose of the activity - summarize the game that the character is intended for and present them with your *Character Template*.   
    
  Draft a set of questions intended to acquire feedback from the participants on your design - how well does it fit the theme/style of the game, and the chosen faction? How well do they think the design fits the role and purpose your have chosen for the character?

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* Summarize the feedback you received from the focus testing and determine how you can utilize feedback from the testing to modify or improve your initial design.  
    
  Draft a list of possible changes/improvements to run past your studio head (lecturer) in the next step.

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* Organize a meeting with your studio head to share your character concept and design, and to determine whether the abilities you have drafted fit with the game and client requirements  
    
  Discuss the feedback you received from your focus testing & the proposed/suggested changes to the design based on the testing.  
    
  Your lecturer will confirm which of the proposed/suggested changes will need to be made before moving on to Part 2, as well as informing of you of any changes that they need made in order for your hero design to meet the client requirements.

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* List any changes which your studio head has asked you to make to your design.   
    
  Create a *version 2* of your *Character Template* and implement the required changes.

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# Part 2 – First Pass - Modelling, Texturing & Animations

## Task 1 - Create Prototype of Hero & Props/Weapons

Now that your hero design has been given the *'green light'* by the studio head you can begin production of the prototype.

Provide a visual record of your modelling, UV unwrapping and texturing workflow by taking regular screenshots to demonstrate progress.

*Tip: use screen recording software such as OBS, Nvidia Shadowplay or even Microsoft Office Powerpoint to record while your work in Blender. Take screenshots from the video later to provide the visual evidence.*

* Start by modelling a prototype model in an A-pose or T-pose based on the concept art you generated.  
    
  Ensure while you are modelling that the prototype adheres to the topology, polygon count and other technical requirements (dimenions, for instance) of the game project.   
    
  Create a prototype model of the hero's props/weapons in the same *Blender* project, scaled correctly to the hero.

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* Next, UV unwrap your prototype models and apply a basic *albedo* texture to test out the colour schemes and visual design.   
    
  Use Blender's image renderer to export images of the texture prototype in it's A- or T-pose alongside it's props/tools, with basic lighting and the Eevee shader to demonstrate how the prototype will look.

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## Task 2 - Apply Rigging & Block Out Animations

Your next task will be to begin applying the animations that will be unique to your character.  
  
Since *Shadowraid: TACTICS* uses only humanoid characters with roughly equal proportions as a baseline, a set of default animations for 'universal' actions such walking, running, dying and respawning will be applied and then adjusted as needed by a different team.   
  
Your character's attacks with their weapon, as well as their three unique abilities, will need their own animations, however.

* Gather animation references for the actions you will need your hero to perform.   
    
  Create a simple storyboard for each animation action you intend to create demonstrating the rough poses that the character will move between as a reference for the keyframes you will block out in Blender.

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* Using *Blender's Rigify*  plugin create a basic rig for your character. Apply the rig to your prototype model and then adjust the vertex weighting as required.

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* Block out the custom animations which your character will need to indicate that they are using their weapon or activating their custom abilities.   
    
  *The animations at this stage do not need to be complete or 'perfect'; focus instead on placing keyframes where the important 'poses' throughout each action will be, and allow the character to 'snap' or 'slide' between them as necessary.*   
    
  For each animation keep in mind the technical specifications which you planned out earlier - the *casting time*, for instance, will dictate how long the animation for any given action should last. Animations which move the character over a specific distance at a specific speed should also be planned out in *Blender* to accurately represent the movement.

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## Task 3 - Feedback & Confirmation of Changes

Now that your model is prototyped, has textures applied and the basic animations are blocked out, you will need to report your progress to your studio manager and confirm that you are on the right track.   
  
This will give you the opportunity to receive necessary feedback and identify any changes you are required to make before submitting your work.

* Organize a meeting with your studio head (lecturer) to show them the rendered images, and the topology/animations of the model in Blender itself.   
    
  Seek feedback from lecturer for the first pass/prototype.   
    
  Note any changes for the second pass/final product based on the feedback received.  
    
  Create a list of the changes your studio head has requested for the second pass of your hero.

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* Save a copy of the *Blender* file for this project as the *prototype*, naming it according to the studio's naming conventions, for archiving purposes.  
    
  Any changes in Part 3 should be made using the *working* version of the *Blender* file, so that the *prototype* version can be retained both for evidence in this assessment and as a backup in case the project needs to be 'rolled back'.

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# Part 3 - Second Pass & Project Submission

The last part of this project will involve implementing the changes your studio head has requested before applying the final touches and polish to your hero.

As with your work in Part 2, you should document your work with a visual record as you make your changes. Create '*before and after*' screenshots as you work on your second pass and include them in this coversheet as you complete each step in each task below.

***Remember: Changes at this stage should only be made to the 'working' version of your project, not the prototype!***  
  
Once this is done you will be able to export the model as a game-ready asset and see your hero brought into the game as a playable character on the test servers!

## Task 1 - Second Pass of 3D Model & Textures

* Update your 3D model by applying any required changes to the topology, scale or other aspects of the model identified in your meeting with your studio head.

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* Update the *albedo* textures according to the feedback you have received (if required). Apply additional required texture maps:
  + *Normal map*
  + *Metallic map*
  + *Roughness map*
  + *Displacement map*

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## Task 2 - Second Pass of Animations

* Expand on the blocked-out animations from Part 2, adding in the extra keyframes to finalize the animations.  
    
  Ensure that each animation meets the technical requirements for the action it represents - namely the timing and motion.   
    
  For 'attack' actions ensure that the animation's *hit* or *release* point matches the specified timing from the *Design Guide*.

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## Task 3 - Finalize, Export and Submit

The final step is to export your hero's project and game files, before submitting everything to Blackboard for marking.

Ensure that your exported files meet the requirements for asset naming conventions as outlined in the *Shadowraid: TACTICS Design Guide*.

* Confirm that the model meets the required specifications of the game project.  
    
  Proceed to export the model as a game ready *.fbx* file. The textures and animations must be baked into the *.fbx*.

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* Submit the following to Blackboard in a single *.zip* file:
  + Blender project files for the *prototype* of your hero, including the texture files
  + Blender project files for the *final* of your hero, including the texture files
  + The game-ready *.fbx* file
  + Your completed *Character Design Template* document
  + This completed assessment cover sheet, and any extra documents you created for documenting evidence of completing the tasks in this assessment
  + The completed *Observation Checklist* (all sections ticked 'yes' by the lecturer, signed by both the lecturer and yourself) to confirm that you have completed all required meetings
  + Any other evidence you feel demonstrates your successful completion of this project