**ASSIGNMENT 1**

**Module title: Game Interface Design & Implementation**

**Module code: GAME50261**

**Tutors:**

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**Department of Games and Visual Effects**

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| Assessment Details |
| Aims This semester you will be introduced to the fundamentals of UI/UX design and creation. We will heavily focus on design considerations and documentation, production of UI assets and finally technical implementation.  Through the process of creating user interfaces you will gain an understanding of how to combine design skills with practical tech skills and how to best communicate information to your user.   |  |  | | --- | --- | | **Module Learning Outcome** | **University Learning Outcome** | | **1**. Show critical understanding of user interface design applied to game engine technology. | Knowledge & Understanding | | **2**. Analyse user interface techniques and develop a workflow based upon research and testing. | Analysis | | **3**. Design a complete user interface for a given game genre. | Problem Solving | | **4**. Reflect upon the effectiveness of different approaches used in user interface design and implementation. | Application  Reflection | |
| Overview Produce polished user interfaces for a mobile ‘match 3’ puzzle game using Unreal Engine 4 [Version 4.25.x]. All planning and development must be documented in a forum thread.  Your user interfaces must include a complete **main menu** and **in-game** **UI** with all required UI elements (listed on the next page) to a polished standard. An Unreal project framework will be provided.  The style of the game interface is yours to decide, however *consider the casual mobile puzzle genre we are focusing on.* You should perform your own research into other similar games and investigate their style and UI design choices. Document your findings on your forum thread. |
| Deadline **Thursday 17th December 2020, 5:00pm**   * You must have all the required research and planning documentation posted on your forum thread by the above time. * You must submit a **.7z** file containing your zipped-up UE4 project. Submit this to the Digital Academy Upload System by the above time. * You must have the required practical progress and documentation posted on your forum thread by the above time. |

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| Requirements | |
| The Match 3 game/UI should be in your chosen theme/style.  The game framework uses some placeholder content, which should be replaced by your own assets. |  |
| To manage project scope and to ensure you have explored the  various methods of UI creation, **please make sure your UI**  **includes the following before creating your own extra**  **elements:**  **The in-game UI must contain:**   * A game ‘board’ * 4 ‘gem’/pieces * Countdown time * Score * High score * Bronze/silver/gold scores * Pause screen * Win/lose screen   **The menu UI must contain:**   * Start screen (e.g. game logo with touch to begin) * Main menu screen * Game settings with at least 3 editable UI elements (e.g. vibration, sound slider, music toggle) * Leaderboards screen * Loading screen   All placeholder art in the framework (shown in above picture) should be replaced.  The settings/leaderboards screens only need to function as UI elements, this means that you **do not** need to build the actual functionality of these (in a studio this would likely be handled by someone else). **However,** *navigation between different screens/options should be fully implemented and working.*  Feel free to add as many decorative assets to your UIs as you want. Just remember this module is **not** focused on the coding of new game features or mechanics.    **Please read the following pages of guidance and assessment criteria carefully, check the FAQ and contact the module staff if you have any questions!** | |

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| Marking breakdown |
| Research and Design (30% of the total assignment) |
| **You must have the following required research and design documentation posted on your forum thread.**  Your pre-production stage consists of research and planning documentation. There is no required structure to these plans as they are for your own development and reference during implementation. However, they must be understandable (e.g. in a studio someone else must be able to read your plans and understand them).  These design marks are rewarded based on the quality of the thread. ‘Quality’ is seen as the ability to explore each of the required elements and a constant iteration of work. Testing and improving the work is a vital part of the design process and will be a large contributing factor to the quality of the work.  *Note: these are* ***not*** *specific headings that must be used, some of the following may overlap* |
| Design documentation [15%] A detailed design plan for implementation, this should include:   * Research and analysis of similar UIs and their UX * Mood boards & reference materials * Theme/idea comparisons * Colour swatches, experimentation and comparisons * Research and analysis of similar UI elements * Prototype UI element artwork (logos, match 3 pieces, backgrounds etc)  Technical documentation [15%] A detailed technical plan for implementation, this should include:   * An Information Architecture (IA) plan detailing the widget structure of your UI and navigation paths around the UI * Wireframes of each widget detailing layouts, anchoring, groupings, control boxes and any other aspects local to widgets * Asset list * Optimisation considerations in reusable widgets and art * Plans animations, sounds or extra features * Project plans, e.g. timelines, contingency plans, MOSCOW |

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| Production and implementation (70% of the total assignment) |
| * You must submit a zip file to the Digital Academy Upload System containing your project in version 4.25 of UE4 * You must have the required practical progress documentation posted on your forum thread   This second section is to create the assets and implement the UI in Unreal Engine’s UMG tool based on the previous planning documentation. Development on forum thread [10%] Following from your design posts, continue to document your progress (~1 post a week) this could include:   * Practical project progress * Development of art assets * Issues encountered, and solutions found * Reflection on work completed * Reflection of final UX of your game   Testing and improving your work is a vital part of the design process and will be a large contributing factor to the quality of the work. Be sure to document these improvements on your thread. Technical implementation [30%] All implementation should follow basic principles such as:   * Correct implementation of IA * Fully functional blueprint navigation and data bindings * Correct use of multiple widget types * Correct use of containers, groupings and anchors * Optimisation considered where possible * Animations and sounds used to enhance UX  Design and Art [30%] UI assets should fit the theme and must include:   * Game logo * Use of custom Font * Custom textures/images for game board, game pieces, button states, backgrounds, tick boxes, sliders or any other UI widgets   All implementation should be following basic principles such as:   * Appropriate and consistent theme/style * Colour theory * Visual appeal, screen space and layout * Usability, Utility, UX * Typeface |

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# Assessment criteria

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| **Module Learning Outcome** | **University Outcome** |
| **1**. Show critical understanding of user interface design applied to game engine technology. | Knowledge & Understanding |
| **2**. Analyse user interface techniques and develop a workflow based upon research and testing. | Analysis |
| **3**. Design a complete user interface for a given game genre. | Problem Solving |
| **4**. Reflect upon the effectiveness of different approaches used in user interface design and implementation. | Application |
| Reflection |

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| University Outcomes: ***Knowledge & Understanding*** | |
| **20% Fundamental Awareness** | An attempt to answer the question, but without any significant grasp of material or appropriate skills. Minimal application of knowledge or use of information. |
| **40% Novice** | Satisfactory knowledge and understanding of the key issues raised by the question; some  knowledge and understanding of its interrelationship with other fields of study. Limited presentation and evaluation of qualitative and quantitative data. |
| **60%  Intermediate** | Very good knowledge and understanding of the issues and methodologies, concepts, theories and/or data and its inter-relationship with other fields of study. Some understanding of limits of knowledge. Good presentation and evaluation of qualitative and quantitative data. |
| **80% Advanced** | An outstanding answer demonstrating a detailed understanding of the issues and methodologies, concepts, theories and/or data and its interrelationship with other fields of study; awareness of the uncertainty, ambiguity, and limits of knowledge. Excellent presentation and evaluation of qualitative and quantitative data. |
| **100% Expert** | Exceptional answer demonstrating a highly-detailed understanding of the issues and methodologies, concepts, theories and/or data and its interrelationship with other fields of study; clear appreciation of the uncertainty, ambiguity and limits of knowledge. Exceptional presentation and evaluation of qualitative and quantitative data. |

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| University Outcomes: ***Analysis, Application, Problem Solving*** | |
| **20% Fundamental Awareness** | Brief, irrelevant, or deficient argument and analysis; unsubstantiated generalisations. Little or no attempt to draw conclusions. Little or no attempt to apply evidence and theory to solve problem. |
| **40% Novice** | Arguments and analysis adequate, accurate and supported by evidence, but may be superficial or limited. Some application of evidence and theory to solve problem. |
| **60%  Intermediate** | A very good analysis and well organised argument very well supported by evidence. Evidence applied well to provide solution to problems. |
| **80% Advanced** | Outstanding analysis displaying independent thought and strong, well-organised argument and highly competent application of evidence and theory to solve problems. |
| **100% Expert** | Original, Independent thinking, rigorous argument and an impressive use of evidence. Thorough and accurate analysis of subject with evidence of breadth and depth of study Excellent application of theory to solve problems. |

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| University Outcomes: ***Reflection*** | |
| **20% Fundamental Awareness** | Unsatisfactory communication skills appropriate to this level of study. Poor level of learning ability, qualities or skills necessary for employment |
| **40% Novice** | Generally satisfactory communication skills appropriate to the level of study, task, audience and discipline but with evident weaknesses. Adequate demonstration of learning ability, qualities or skills necessary for employment. |
| **60%  Intermediate** | Very effective communication skills appropriate to the level of study, task, audience and  discipline. Good demonstration of managing own learning and initiative, learning ability, qualities or skills necessary for employment. |
| **80% Advanced** | Extremely effective communication skills appropriate to the level of study, task, audience, and discipline. Excellent demonstration of managing own learning and initiative, learning  ability, qualities or skills necessary for employment. |
| **100% Expert** | Exceptionally effective communication skills appropriate to the level of study, task, audience, and discipline. Exceptional demonstration of managing own learning and initiative, learning ability, qualities, or skills necessary for employment. |

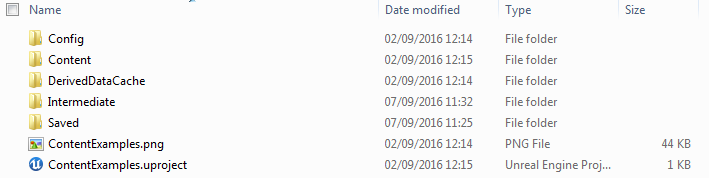
# Guidance for submission

Submitting your UE4 project is very easy, however be aware that projects can grow and be quite large to upload. You must factor in upload time of your work. Uploading on campus is recommended, as the University will not accept a bad home internet connection or slow upload speed from home as a reason for being late.

Your project name should be your **student ID.** eg: a123456b

To submit your work, you simply need to zip the entire project directory, **including** the uproject file, using 7zip.

Your project directory will look like this:



**Before** zipping up your project directory, it is recommended you delete 3 directories, if they exist: “Intermediate”, “Saved” and “Logs”. If these are not present, you do not need to worry about following this step.

Deleting these can lower the size of your project significantly. They are only used for development, so would be unneeded for your final submission.

You **do not** need to submit a *packaged* version of your work, only your complete **project** directory. We will be unable to mark packaged versions of your work, as we can’t see the asset files or blueprints.

**Your final submission should be a single 7zip file (.7z), which extracts your project. Do not upload any other format, such as rar. Do not put archives in archives – it doesn’t make them any smaller.**

When using 7z to compress your work, it is recommended that you use ‘fast, ‘fastest’ or ‘normal’ for the compression type. Anything above this will take much longer to compress and decompress but will offer a minuscule decrease in size.

You will be handing in your work through the Digital Academy Upload System – Link can be found on the blackboard page.

# Workflow and other information

The Unreal Engine has a great workflow and is generally trouble free, but there are a few rules that you must obey as a user of the software. Many of these rules are true for other games engines and 3D software.

## Backing up

You **must** always keep a backup of your work! It is strongly recommended that you save all work directly to a cloud service like OneDrive, Google Drive or Dropbox.

Backing up your project in UE4 is easy: Simply zip (7z) your entire project folder. You can then copy this to another location.

**Remember that your student Office 365 account has 1TB of OneDrive space you can use for backups!**

**Do not** work from the ‘O’ drive on the lab machines, this is a network link to your OneDrive and is not local PC storage. As a result, your project will run VERY slowly. Copy your project to the student temporary folder first.

**It is strongly recommended** that before you even open a project on a machine, you ensure you have a backup of the project by zipping it. If a project corrupts, you damage it, the machine crashes, or any other issue arises, you can simply extract the zip to get your original project back.

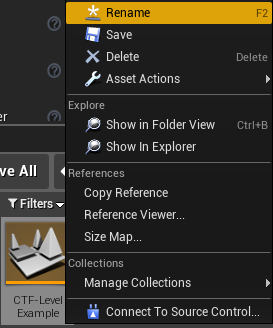
You should always follow the [3-2-1 backup](https://www.backblaze.com/blog/the-3-2-1-backup-strategy/) strategy for your work. *This is industry standard*.

## Filenames in UE

For this submission, we ask that your project is called your username. This is your normal username that you use for logging onto the University computers. This is also the same as the text before the ‘@’ in your email address.

**Important:** It is **very** important that you never move or rename files in your project outside of the Unreal Engine. If you do this, it is likely to break and you will need to restore it from a backup. This stands true for all files (maps, blueprints, and all other assets). You should also never use any special characters in your asset names or project name.

If you want to change the name of any asset, you should do it within the Unreal Engine:



# Taking screenshots for your forum posts

As this is a very visual-focused module, we expect images on your forum threads. You should aim to have at least: Reference images, rough sketches/wireframes, game UI research, completed assets and progress screenshots of implementation in engine.

Please **do not** post *links* to images, instead, embed the actual image on the post. You can use websites such as imgur to host them externally if needed. You could also post embedded **videos** via YouTube of animation or functional UI implementation.

To do this quickly and effectively we recommend using [**ShareX**](https://getsharex.com/), a free application that lets you quickly snip areas of your screen as images or video clips.

You could also use the built-in Windows Snipping Tool to snip areas of your screen, although ShareX includes much better functionality (especially for videos).

**Please see the ‘Extra Content’ folder on Blackboard for a video on how to setup and use ShareX**

# Frequently Asked Questions

**I don’t want to do a mobile puzzle-based UI; Can I do something else?**

No, the method of assessment is for this type of game.

**Will I get marks for simply copying class content and not adding anything of my own?**

No, you must create unique content, although we understand you may like to base some of your first ideas off class content and modify them.

**How do I hand in my work when it is completed?**

You will be handing in your work through the Digital Academy Upload System, the link to the upload slot can be found on the side of your blackboard module page.

**How do I access the Digital Academy Forums?**

Your forum posts will be created on our Digital Academy which can be found here: <https://digitalacademy.staffs.ac.uk/forum/>

Make sure to find the correct year, semester and module, and to name your thread correctly.

**What exactly am I handing in?**

We are expecting forum documentation covering two parts, design and tech. We are expecting you to zip up your entire UE4 project and upload it to the Digital Academy Upload System. Note that this may take some time to finish so do not leave it until the last minute.

**Can I have an extension please, they used to do this at college /school etc?**

The only time that you will be granted an extension for this module is if you have a learning support agreement (LSA), in this instance you will need to contact a module lecturer.

# Extensions

Extensions can only be granted based on a learning support agreement (LSA). If you are entitled to an extension in accordance with you LSA, please contact **a module lecturer or the module leader** to discuss extended deadlines:

**Bradley Austin** – Module Leader

Contact email: [Bradley.Austin@staffs.ac.uk](mailto:Bradley.Austin@staffs.ac.uk)