# Engineering team 20
# Requirements

Setting out requirements is essential for successful game development. Establishing requirements ensures all team members have clarity of the aims and a strong baseline for development guidance. This is key for good communication and satisfying our stakeholders (customers).

In order to design our requirements we began by scoping out the brief and designed a set of questions for our customer.We scheduled a meeting where he addressed our questions.

Below is a snapshot of our questions and answers from the customer

Should we implement various game modes
NO
Should we implement multiple playable sprites
Yes- Very Important
Should we implement multiple stages
NOT YET - customer stated in assessment 2 this can be used

After our discussion we gained a clear understanding of what User requirements, non-functional requirements and functional requirements we needed in order to please our stakeholder. We noticed an emphasis on the principle of  KISS(KEEP IS SIMPLE STUPID) in the briefing, so we ensured to prioritise simplicity.  To facilitate the software development process, we then formalised these requirements and applied fit criteria to ensure thorough completion.

# User requirements

| ID | Description | Priority |
|---|---|---|
| UR_Student | The user has a sprite they can move to perform actions. | Shall |
| UR_Map | The game has a world with objectives within and on the edges of the map. | Shall |
| UR_Scoring_System | The player is given a score at the end of the week for their performance. | Shall |
| UR_UX | The system will provide clean, distinguishable graphics with clearly labelled buildings and collision points.<br><br>Menus and buttons will be also clearly labelled | Should |
| UR_Student_Interact | The student will be able to interact with a range of collisionable items | Shall |
| UR_Lose_Game | The user will lose the game if they do not study enough, rest enough or have enough leisure time. | Shall |
| UR_Tutorial | On first start, the user will receive a tutorial explaining how to play. | Could |
| UR_Win_Game | When the Student has completed his study quota while managing his leisure and energy they win. | Could |
| UR_Student_Move | The user has controls to move their student.. | Could |
| UR_Rest_Area | The user must interact with this area to rest and replenish energy. | Could |
| UR_Eating_Area | The user must eat to continue to live, maybe cannot progress until eats. | Could |
| UR_Study_Area | The user may interact with one or more locations to study. | Could |
| UR_Rec_Area | The user may interact with one or more locations to complete a recreation activity. | Could |
| UR_Choose_Avatar | Users must be able to choose an avatar to represent them in the game. | Shall |

| | | |
|---|---|---|
| UR_Sleep | Character must sleep for 8 hours each night. | Shall |
| UR_Choose_Action | If a user is not currently occupied they should be able to choose an action to complete, | Shall |
| Mute | Users should be able to mute the game. | Shall |

## Functional Requirements

| ID | Description | User Requirements |
|---|---|---|
| FR_Main_Menu | On start the user can choose to start a new game ,change their avatar or mute the game. | UR_UX<br>UR_Mut<br>UR_Choose_Avatar |
| FR_Mute | There will be a mute button or volume slider on the main menu. | UR_Mute |
| FR_Controls | The control scheme will be simple for the user to move and interact with the environment. | UR_Student_Move<br>UR_Student_Interact |
| FR_Choose_Action | When clicking on a building users will be shown one or more actions to select. | UR_Choose_Action<br>UR_Rec_Area<br>UR_Study_Area |
| FR_Complete_Action | When the user selects an action the relevant amount of time should pass and the event should be counted. | UR_Rec_Area<br>UR_Study_Area<br>UR_Rest_Area |
| FR_Sleep | Users should be forced to sleep after a certain number of hours of actions have been taken. | UR_Sleep |
| FR_Track_Stats | Keep track of how many times each action has been | ALL User Requirements |
| FR_Energy | The student starts with 100% energy, this depletes as actions are carried out | UR_Student<br>UR_sleep |

## Non functional requirements

| ID | Description | User Requirements | Fit Criteria |
|---|---|---|---|
| NFR_Instructions | Provide the user with a set of instructions which are clear and understandable. | UR_UX | The objectives of the system will be clear and an instruction set will accompany it. |
| NFR_Bugfixing | Bugs will be fixed and updated | ALL User Requirements | The system will be repaired by developers when game breaking |

| | | | |
|---|---|---|---|
| | | | bugs are run into |
| NFR_Smooth_Gameplay | The game shouldn't crash.If a crash occurs the game should be restartable without any issues. | All User Requirements | The system is operational and available for use approximately 95% of the time. |
| NFR_Delay | The game should have minimal or no lag | ALL User requirements | The system should not be affected by lag |
| NFR_Controls | All controls should be similar to other games in the same industry | UR_UX | The system will be operated by a set of recognizable controls |
| NFR_options | Hotkeys ,sound and window settings will be changeable for the user. | UR_UX | The system will allow users to change settings to their preference |
| NFR_Map | The map's entities will be distinguishable and we will have affordance in place for all interactables | UR_Student<br>UR_UX<br>UR_student_interact | Users will receive a visual |
| NFR_Scalibility | The game can be updated by other developers and previous code shouldnt break(within reason of changes) | ALL user requirements | The system will be able to accommodate updates to the code whether it be a bigger map or other implementations |
| NFR_Desktop | The game will have compatibility support for desktop | ALL User Requirements | The system will be playable on a desktop device |
| NFR_Graphic_clarity | The game will have high quality, consistent graphics which can render across all devices (within reason) | All User Requirements | The system will have high details and textures |
| NFR_Age_Relative_ compliance | The game will abide by PEGI 12 industry ratings and content regulations | UR_UX<br>UR_Student<br>UR_Student_interact | The system won't contain any vulgar language, violent themes or innuendos. |