

Requirements

Group 14

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Introduction:

Requirements were elicited from both the initial assessment brief and a meeting with the customer to discuss specific requirements. The aim was to gather essential user, system and constraint requirements for our system. Research into requirements specification and presentation were conducted using resources provided by the course, such as the essential textbook I. Sommerville, "Software Engineering," 9781292096131, Aug. 20, 2015. This helped to ensure the presentation of the requirements were concise and accurate.

The 21 questions asked at the **customer meeting** were designed to cover usability, functional and non-functional requirements, and to ensure our implementation could be as exact to the customer's needs as possible. They were also asked in priority order to ensure that the most important requirements for our developers were definitely covered in the (initial) meeting. By ordering this in order of priority, it ensured that we could gather a specific understanding of the task at hand.

In our **project discussions**, there was consensus regarding the inclusion and exclusion of certain elements. Furthermore, the team has collectively decided that prioritising user requirements for enjoyable gameplay stands as paramount. Due to the results of our client meeting, our prioritisation centres on features that distinctly improve gameplay and user experience – for example our client expressed that there was not a need for security measures due to the lack of an online aspect to the game. This and other strategic approaches ensure that resource allocation and focus on critical parts of the game is maintained.

Our **presented requirements** include usability requirements, functional requirements and non-functional requirements. Each requirement is thoroughly explained, and user requirements have been ranked in order of priority to ensure the customer is satisfied with the finished product. Functional, constraint and nonfunctional requirements fall under system requirements and therefore do not need to be seen by the client. All functional requirements have been linked to a corresponding user requirement to ensure that everything relates to what the client needs and is therefore not unnecessary.

In conclusion, the requirements elicitation process involved multiple steps to ensure the capture of all of the needs of our stakeholders, prioritised to ensure the development process can clearly follow the client requirements. The presented requirements reflect a series of discussions both with our client and within our team to ensure everything presented is concise and relevant. This structured approach will ensure the software development team can confidently deliver a product that meets the expectations of the client.

User and System Requirements:

Constraint Requirements:

The software should adhere to specific **constraint requirements**. Development of the game should be conducted using Java version 11. All deliverables should include correct file names and formatting. The gameplay should be optimised for Windows desktop users. The game must only accept a keyboard input, with universally recognised controls such as WASD or the arrow pad for navigation.

User Requirements:

Requirement ID	Description	Priority
UR_DEMOGRAPHIC	Must be appealing to potential computer science undergraduate students.	Should
UR_REPRESENTABILITY	Must include a rough idea of life on campus and attending the university.	Should
UR_AVATAR_DIVERSITY	Must be able to simply customise an avatar to reflect the diversity of the university.	Should
UR_GAME_PLAY	The game should be easy to play, and should be a short game-play.	Should
UR_NO_OF_MAPS	One map is implemented.	Should
UR_RESPONSIVITY	The game should feel authentic to play, with implementations like transition screens between days.	Should
UR_AVATARS_ON_MAP	Other avatars are to be included on the map, possibly interactive.	Should
UR_USER_EXPERIENCE	The game should give users free will of what to do.	Shall
UR_ART_STYLE	A family friendly art-style that is also accessible for all.	Shall
UR_ACTIVITIES	Activities for the player to complete throughout the day, varying in complexity and outcome.	May

Functional Requirements:

Requirement ID	Description	User Requirement ID
FR_GUIDE	The system should provide basic guidelines on how to engage in the game.	UR_GAME_PLAY
FR_ACTIVITIES	The system should take into account the players' actions, which influence their energy levels and entail corresponding consequences	UR_ACTIVITIES
FR_STUDYING	The system should afford players the chance to study twice in a single day, once per game session.	UR_USER_EXPERIENCE
FR_CONSEQUENCES	The system should implement outcomes for events that might have a degree of randomness, determining available actions based on these outcomes	UR_ACTIVITIES
FR_OUTCOMES	The system should provide multiple favourable outcomes tailored to the player's enjoyment and overall satisfaction, not solely based on academic success.	UR_USER_EXPERIENCE

Non-Functional Requirements:

Requirement ID	Description	User Requirement ID	Fit Criteria
NFR_DOCUMENTATION	There should be documentation in the system that tells the basics of how to play.	UR_GAME_PLAY	The game should be appealing to 80% of potential computer science students, even those who have not played games

			like this before.
NFR_OPERABILITY	The system should be playable by users who have not received training	UR_GAME_PLAY	90% of users will be able to complete the game with no training.
NFR_TIMING	The game map should load relatively quickly in order to feel responsive to the user.	UR_RESPONSIVITY	The game map should load for the user in <5 seconds.
NFR_ACCESSIBILITY	The system should be accessible to colour-blind users by not having two separate graphical elements that you can only tell apart by colour.	UR_ART_STYLE	The system should be accessible to 80% of users.
NFR_GAMEPLAY_TIMING	The gameplay should take no more than 20 minutes to complete.	UR_GAME_PLAY	90% of users will be able to complete the game within 20 minutes.