ENG1 Assessment 1: Requirements

Greenfield Development

Group 5

Members

Mark Faizi

Ben Faulkner

Christian Foister

Lewis Hanson

Ziyad Rashad Hassan

James Haworth

Requirements key (Req1-key.png) located on Website under section 'Supporting files'

A) Introduction

Our requirements were elicited through an interview with our main stakeholder (the client) and a series of questions asking for specific details of implementation, such as events frequency or student satisfaction metrics. The justification for this approach after research into the field came from a number of factors, firstly Sommervilles' "Software Engineering" section 4.5.2 mentions how interviews with stakeholders are part of most requirements engineering processes, from the information presented, it was deemed that this was an effective way to elicit concrete requirements, if the interviewers went in with an open mind and prompted the interviewee effectively.

Secondly our team deemed it important to get to the heart of what the client wanted out of the game, and where we were able to take creative liberties in how to implement certain features as opposed to the idea being set in stone.This was achieved by gathering broad ideas from our client and expanding open those too influence our design choices for example when discussing the core gameplay features with the client , he informed us his desire to have the players managing campus facilities,placing buildings and reacting to events(**R2,R3**) that impact campus day to day operations.These however should not be overwhelming to the player and should feel engaging and entertaining while introducing randomness requiring the player to respond. Expanding on this, the team thought of events like a frequently used building closing for renovations(a real world example being the Ron Cooke Hub on Campus East) or for example a duck invasion making it harder to get to classes therefore decreasing student satisfaction forcing the player to have to adapt to accommodate in other avenues or to improve the universities infrastructure to handle the increased Traffic.

Also, while the main focus of the game should be on the infrastructure of the university,building upon the clients ideas,we discussed that student satisfaction (**R4**)could visually represent how well the campus operates for example "students being too close to their lecture halls" shoulda affect student satisfaction and overall well being, and building upgrades and improvements could improve these metrics over time(**R15**).

Finally, a table of requirements, user and system, was constructed. With system requirements being further broken down into functional and nonfunctional requirements. This was deemed a clear and effective way to present each point, as shown in IEEE 830, which claims this process makes requirements more readable,

especially for listing non-functional requirements like performance, usability, and reliability.

B) User and System Requirements

Firstly, two of the essential System requirements that our client informed us of for the base game(**R1,R2**) to be able to operate as intended are the necessity of having a campus Map, which is essentially the play area that the user shall operate on. Where they shall be able to: place,demolish,renovate and upgrade various university buildings throughout the course of the game,the need for this to be intuitive and for the controls to be easy to learn and operate is of utmost importance as a clunky control scheme could make or break our game.

There also must be different options for each building type in the game for example, classes(different types of lecture halls), food(different sizes possible for cafeterias), recreation(basketball courts,gyms,study, open air hangouts).This is to give the user complete control to be able to bring their fantasy layout too life, which will give a more immersive experience overall while promoting and increasing game/map layout diversity.

Secondly, right after the very barebones game requirements that are the Map and Placing of buildings come the two primary game cycles which are Random Events and Student Satisfaction Metrics (**R3,R4**) these are of utmost importance as they can make or break our game, as too little or too many Events(**R10**) could cause the user too feel too overwhelmed or that it does not matter,also if student satisfaction is too invasive or fluctuates to suddenly this could quickly lead to player frustration towards the game which would lead to player retention issues(no one would waste time playing a game that they do not enjoy).

Different Events (**R3**) student interviews will be conducted around campus , asking students to rank ten quicktime and longer events from most fun to most tedious which will help us decide exactly on which will be best to implement. These would include (ducks invading, buildings fire sale,seasonal events like christmas,etc)

The second point (**R4)** could also incorporate (**R14),** if for example a player is finding the Student satisfaction Metrics mini-game/sidequest too frustrating , a difficulty option could be the ability to be able to turn off the student satisfaction metrics entirely, turning the experience into a more relaxing - take it at your own pace type of sandbox experience.

A top down view (**R5**) was an essential requirement from our client, this can be expanded upon by incorporating visually appealing graphical designs and a minimalistic user interface to not overwhelm the player. A Time Limit(**R6**) is an essential component of the game as a sense of urgency is required to make the user feel immersed throughout their time playing the game, not reaching the required score which would be different per difficulty level the user is on (**R14**) would make the game feel fresh and add a necessary sense of accomplishment and fulfilment to playing the game.

The scoring system(**R12**) can be implemented depending on the student satisfaction metrics(**R4**) with a multiplier affecting the amount of score gained, for example the player would start the game with zero score if student satisfaction is above the baseline , they would be gaining a set score per interval, the higher the student satisfaction a multiplier will then be applied to that score. On the other hand, as student satisfaction starts to go down so will the multiplier until a baseline of zero is reached once more, a negative score can not be achieved as there would be a score goal that would need to be met in the five minute time limit(**R6**) otherwise the game is lost. With the difficulty settings(**R14**) decreasing score multipliers and making student satisfaction more difficult to improve as the difficulty level is increased.

It was important to our client that the game should be light hearted and humorous(**R11**) events like ducks invading and otherwise should introduce humour without making the game a joke, and that the game must avoid a “dark theme” and aim for a happy/colourful aesthetic, this is to make sure that the game is suitable for all ages and this leads on to (**R13**). As following this would make our game a lot more Accessible to more players of various ages.

Another aspect of accessibility(**R13**) is that for example visual game indicators should not rely solely on colour, as the client specifies that they currently envision the game as a desktop game. However they were uncertain on how they feel about a mobile version of the game but wanted to keep the option available, if they have a change of heart.

Another pair of features which was of utmost importance are the ability to pause and play the game(**R9**), this is extremely important as a gamer and especially a young adult which this game is aimed towards. Life gets in the way and complications arise that need your urgent attention. Having the feeling of worrying about losing progress in the game as well as the matter at hand is not healthy and not an enjoyable play experience whatsoever, therefore a core functionality of our game is the ability to pause and resume at any time during the game session; this is implemented in our initial version of the game.

An additional aspect which was taken into consideration is how the close proximity of university buildings(**R7**) to student housing affects their mental health , therefore leading to an effect on the student satisfaction scoring system. This works both ways as for example adding recreational building and services near student accommodations like areas to relax, sports facilities and places to eat would increase student satisfaction metrics.

Lastly, visual representation(**R8**) of important aspects is very important to our game, as this improves accessibility,ease of understanding and readability, it is essential that our game visually represent important aspects through icons or animations and not simply text.These could include event notifications or student satisfaction metrics and updates.