A Knowledgebase for ‘League of Legends’

Work in Progress Documentation

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CMP3753M Project,
Proposal/Work in Progress Document.

Grateful thanks goes to the ACMSIGCHI Extended Abstracts format on which this is based. https://sigchi.github.io/Document-Formats/

Abstract

League of Legends is one of the most popular fast-pace online games to date but is notorious for being difficult to learn. This project aims to create a knowledgebase in the form of a user-friendly website based upon the design of the game in which experienced players can contribute advice to help new players learn and understand how to play. After players and therefore potential users of the site have been surveyed to gather requirements and to enable statistical analysis of various details about the audience such as average skill, user-centered design will be used to design a responsive website that can be viewed by anyone and logged into by high-level players to submit guides that can both welcome new players and improve the ability of any player at any level.

Author Keywords

Computer Science; Web Development; Web Authoring; Website; Database; Knowledgebase; Human-Computer Interaction; User-Centred Design; League of Legends; Gaming

Introduction

League of Legends (LoL) is a fast-paced, competitive online game where two teams of powerful champions, each with a unique design and playstyle, battle head-to-head. With an ever-expanding roster of champions, frequent updates and a thriving tournament scene, League of Legends aims to offer endless replayability for players of every skill level. (leagueoflegends.com, n.d.) Whilst many websites exist which provide experienced players with information to help them improve their gameplay, and others that show professional players' latest stats and builds, this project will involve filling in the gaps to better welcome new players. An issue this project will explore is sources showing step-by-step game strategies that allow players to mindlessly copy them during gameplay, rather than providing enriching information that will help players understand the game better and allow them to adapt to various situations. The project incorporate concepts from Web Authoring and Databases since the product will be a responsive website designed upon the game and a knowledgebase in which experienced players can contribute guidance. Despite using skills in Web Development, this project will be fundamentally based on Human-Computer Interaction, a core of Computer Science, as the result will be a user-friendly website tailored specifically for players of the game of various levels and in various scenarios. The most logical approach to this task is user-centred, which is design based upon an explicit understanding of users and the tasks carried out in their environment, due to existing game experience and community connections. The benefit of this methodology is that the process is iterative and therefore more flexible meaning scope and requirements can be easily adapted, which is very necessary since user-centered design will frequently involve feedback from users.

Aims and Objectives

The overall aim of this project is to produce a user-friendly website based on the design of League of Legends on which experienced players can submit advice to other players or aspiring players, creating a 'knowledgebase'. There are several objectives that must be completed in order to achieve this aim and they will act as milestones of the progress of the project:

- Survey the League of Legends and wider gaming communities by posting an online questionnaire on various relevant Facebook Groups and messaging game contacts about their experience with the game and thoughts on existing guide sites in order to gather user requirements and new ideas that could lead to new objectives to meet

- Implement an interface and database in which experienced players can easily submit advice in a guided structure

- Create a log-in system in order to be able to contribute to the knowledgebase in which the players' level and rank will be checked to ensure that only experienced and knowledgeable players will be able to give advice

- Make the advice written by experienced players accessible to everyone, without login or any

complications to make new players feel welcome and able to access guides easily

- Implement a profile feature so that a players' level, rank, and main champions can be displayed, and other users can easily find other guides written by the same person

- Create a space and/or search feature for both generic guides and specific counter guides or builds so that players of any ability can find both beginner information and help for specific scenarios to understand and learn the game better as well as improving their gameplay

- Implement a feedback system so that posted guides have more credibility and verification if they are rated highly by other users. The ability to post comments or even edit/contribute to a guide may enable well written guides with some inaccuracies to be improved

- Design the site in a way that reflects League of Legends, such as using similar colours and fonts so that the purpose is clear and delivers a complementary experience to playing the game

- Make the site responsive so that it can easily be used on mobile devices and various screen resolutions

- Conduct a user evaluation to assess whether the design is user-friendly and accessible which will enable improvements to be made based on feedback

Academic Literature Review

Relevant academic literature will be considered both before development as a means of scope and requirements elicitation and throughout the process to ensure focus and consistency is maintained. Research into Human-Computer Interaction theory, UX design, and League of Legends itself is essential to this project. Other subjects such as web development strategies and languages, and more generic MOBA and games information may also be of use.

Interaction Design: Beyond Human-Computer Interaction (Preece, Rogers and Sharp, 2019)

Interaction design requires an understanding of the capabilities and desires of people and the kinds of technology that are available, and Interaction designers use this knowledge to discover requirements and develop and manage them to produce a design. This book provides an introduction to all of these areas and teaches practical techniques to support development as well as discussing possible technologies and design alternatives. Since this is primarily a HCI project, research into this topic is fundamental in order to use the most suitable design and development techniques. This book can act as a useful signposting tool for stages such as design, prototyping, development, and evaluation throughout the project.

Exploring Player Experience and Social Networks in MOBA Games: The Case of League of Legends (Mora-Cantallops, 2018)

This thesis explores player experience by characterising a sample of League of Legends players and uses variables and social relationships to analyse their links

to player experience. This research relates to this project since it helps to understand the players and therefore the potential users of the system. Furthermore, since the learning system aims to improve player experience it is crucial to investigate ways of doing this. The results of this research showed that overall players perceive the game as 'fair' for their competence level and their relatedness towards teammates is affected by their social structure. This is useful information since the system will aim to both improve players' abilities as well as improve inter-player relations.

Using API Data to Understand Learning in League of Legends: A Mixed Methods Study (Gerber, Sweeney and Pasquini, 2019)

This study was carried out to assess the impact of learning and player growth in League of Legends. In order to create a system to help players learn, an understanding of how players learn is important. This study found that adolescents that participated in a LoL summer camp improved their personal performances, particularly their vision score which is arguably the most team-focused aspect of the game. Therefore, teaching team-focused activities can have a significant impact on player performance. This article has highlighted the importance of players understanding teamwork and how players can help each other, as well as the possibility to use an API in the system to be created.

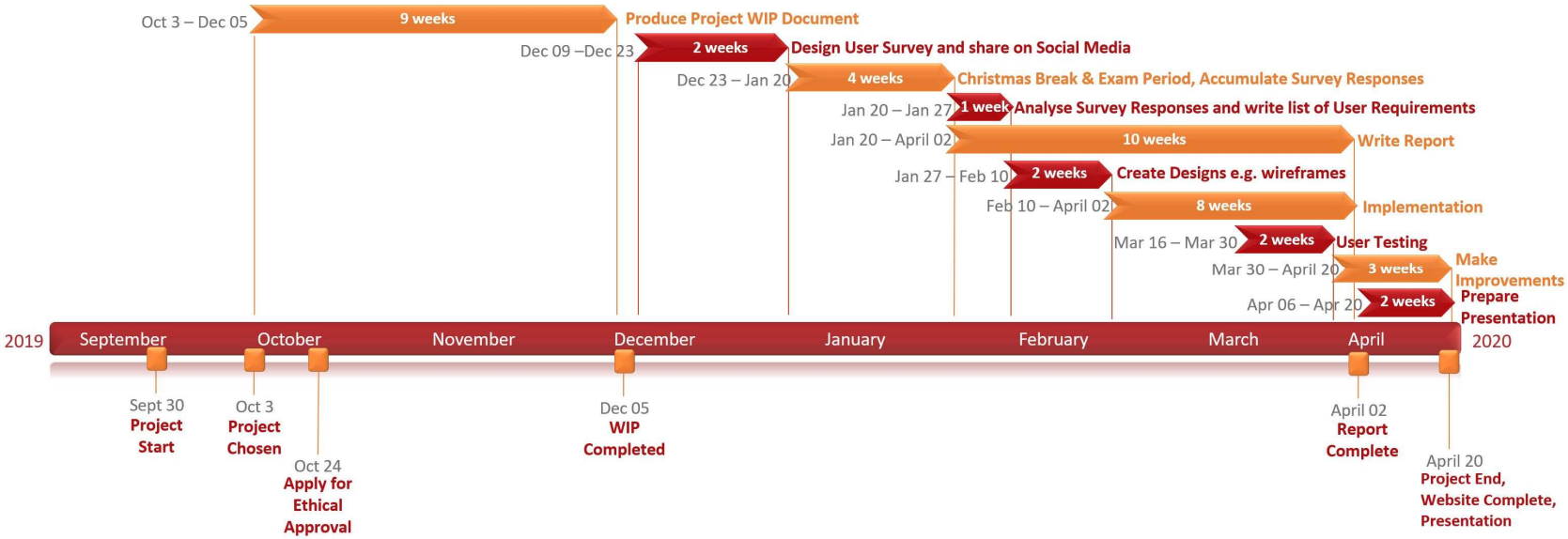
Comparison of Visualization Tools for Matches Analysis of a MOBA Game (Afonso, Carmo and Moucho, 2019)

This article compares existing tools which analyse League of Legends games and player performance. When creating a system, it is essential to research existing similar systems to assess the 'gap in the market', what is currently lacking, and what a new system can uniquely offer. The results of this research concluded that players prefer tools which offered more visualisation such as graphs and charts. These findings have made it clear that the system made for this project needs to offer a wide range of visualisation methods in order to engage players effectively.

A Quantitative Analysis of Strategic Leadership in Teamwork: Inspirations from the Case of the Game Named League of Legends (LOL) (ZHANG, ZHANG and YU, 2017)

The purpose of this research was to explore the relationship between characteristics of strategic leadership and organisational effectiveness. The study verified that team leaders' qualities, organisational abilities, and interaction abilities all have a significant positive effect on the team effectiveness. This relates to this project since the players contributing information to the system will be experienced and almost leading those learning from them. However, the study could not verify that team members' execution of strategy leadership has significant positive effect on the team effectiveness, and also found that the rise of the leaders' level has negative effect on the team effectiveness. These findings could point out the importance of every player learning and being able to make their own decisions, which verifies the purpose of the system.

Project Plan



The first 9 weeks of this project allotted to writing Work in Progress documentation involves tasks such as researching existing similar websites and tools, creating a list of objectives, researching various pieces of relevant academic literature, planning the project timeframe, carrying out a risk assessment, meeting with the project supervisor, and reviewing the progress so far. The following 2 weeks will be spent designing a survey that will gather user requirements and information about potential users. This will then be posted on various means of social media over the Christmas period while this project will be temporarily on-hold and as many responses can gather over the longest possible timeframe that can be allowed. Once these requirements have been gathered and analysed, the next semester will be spent writing the report throughout, from the start to the deadline and meanwhile, design and implementation will take place. The design stage will involve creating various designs such as moodboards and wireframes to establish a plan of colour schemes and layout. Then, the website will be implemented. This implementation stage could not be broken down into more specific individual stages at this point since the design methodology is somewhat undecided. For example, it could not be broken down into front-end and back-end since this approach is not likely to be taken since fully completing both the front and back end of one page of the site at a time would be

preferred. Also, user testing must take place before the report is to be completed so that the results gathered can be discussed. This may be in the form of a second survey in which users are sent a link to the website and asked various questions to assess it. Although some modern methodologies carry out testing iteratively throughout the development process, it may be difficult to gather enough testers to be able to do this. So, the testing period is focused within 2 weeks when the website will be in an almost-complete state but there will be enough time to act upon the feedback provided. Furthermore, users may find testing easier when the website feels fairly complete so they do not have to imagine what it will be like as a finished product. Then, improvements can be made to the site before it is to be presented and the project comes to an end to ensure the most user-friendly product as possible.

Risk Assessment

Key

Ratings/scores refer to the matrix table found below

L: Likelihood
C: Consequence
T: Total Risk

		Likelihood				
		1 Rare	2 Unlikely	3 Possible	4 Likely	5 Almost Certain
Consequences	5 Catastrophic	5 Moderate	10 High	15 Extreme	20 Extreme	25 Extreme
	4 Major	4 Moderate	8 High	12 High	16 Extreme	20 Extreme
	3 Moderate	3 Low	6 Moderate	9 High	12 High	15 Extreme
	2 Minor	2 Low	2 Moderate	6 Moderate	8 High	10 High
	1 Negligible	1 Low	2 Low	3 Low	4 Moderate	5 Moderate

Figure 1: An example of a 5 x 5 risk matrix (Highley, 2018)

Risk	Possible Effects	Risk Rating	Solutions to Minimise Risk	New Risk Rating with Controls in place
Not getting enough responses to surveys	Insufficient information provided to carry out effective requirements elicitation and user-centred design	L: 4 C: 2 T: 8	Allow plenty of time for the responses to accumulate, post in a less busy time (the holidays), share on various platforms to reach the most people, make it easy to access and fill out.	L: 3 C: 2 T: 6
Not having enough contributors to the knowledgebase	The site would be too empty and too difficult for users to test and use since there would be no existing examples, rendering the site useless	L: 4 C: 3 T: 12	Due to personal game experience and strong connections with other players, enough contributors will be able to begin filling the knowledgebase out as starting examples that can be expanded upon in the future	L: 3 C: 2 T: 6
Hate Speech and/or cyberbullying	The ability to comment on guides posted could lead to offensive content being posted	L: 3 C: 4 T: 12	Make a list of rules that users must agree to at sign-up, and add a report functionality so that offensive comments or people can be made aware of and therefore blocked	L: 2 C: 3 T: 6
Privacy	Personal Information such as name and address may be obtainable and used for malicious purposes	L: 3 C: 5 T: 15	Personal information is unnecessary for this site so avoid fields at sign-up that require information of this nature, a username is sufficient	L: 1 C: 5 T: 5
Loss of user data	It is possible that database tables containing user data may be altered or removed	L: 3 C: 4 T: 12	Back up the database regularly and set permissions so that only authorised people can make changes to the database	L: 2 C: 3 T: 6
Interface design could exclude the less-abled	The site may be too difficult for people with certain disabilities to use and could therefore be seen as discriminating	L: 3 C: 2 T: 6	Since playing the game requires a certain degree of motor and vision ability, users with these impairments will not be the target audience for the site. Other accessibility features could be adopted such as making the interface suitable for those who are	L: 1 C: 2 T: 2

			colour blind. The site will also be validated by W3C standards	
Poor testing	Insufficient system and user testing can result in an incomplete product that does not work as intended	L: 3 C: 3 T: 9	Dedicate sufficient time in the project plan to carry out rigorous testing. Carry out user-testing so that users can provide feedback while there is time to act upon the suggestions before releasing the finished product	L: 2 C: 3 T: 6
Site being unsupported on some devices or browsers	The site may be unavailable to part of the target audience if it does not work properly on their chosen device or browsers	L: 3 C: 2 T: 6	Ensure that up-to-date HTML5 standards are used. Include media queries to adapt the site to various screen widths in order to ensure compatibility with devices of varying sizes. Design and features will be varied to be most suitable on various devices.	L: 1 C: 2 T: 2

Review of Progress

The first thing achieved whist deciding on this project and determining its objectives was assessing the competition. Although the aim of this project is not to create something completely ground-breaking and entirely unique, it was important to ensure that the product would not simply be a replica of an existing site. Discovering what existing similar sites offered and were lacking helped to produce a definitive list of project objectives, since key features of sites of this type would need to be included and new features not currently offered would give this project individuality. This list of objectives aided in planning the project timeframe as it is crucial to allow enough time to achieve each objective in order for the project to be successful.

Literature review is an important ongoing process in any project, and this has successfully begun and is on-target. Reviewing academic literature highlighted the principles of human-computer interaction, the nature and tendencies of League of Legends and its players, and the purpose of various existing tools related to the game. Various pieces of academic literature will continue to be found and studied throughout in order to ensure the relevance of the project and will particularly be carried out during the 10 weeks allotted to report writing in the project plan.

An important milestone has already been met which was being granted ethical approval. Ethical approval was applied for early on in the project and this facilitated critical thinking into what the project will involve and require. Thankfully, no ethical concerns have been raised in relation to this project but since user testing is essential to ensure a user-centred design resulting in a user-friendly website, it was imperative to consider how people would be involved in this project and whether they would be at risk of harm. Furthermore, a risk assessment has been carried out which considers all possible risks of this project, whether they affect other people or the success of the product itself. More importantly, methods of mitigating these potential risks have been carefully planned which ensures that no factor of this project is of high risk and therefore all are within a reasonable threshold. In hindsight, it may have been better to carry out the risk assessment before applying for ethical approval to ensure that all risks had been thoroughly considered. Nevertheless, no ethical concerns or risks were raised at either stage.

Although the progress of this project has been slow to begin with and no objectives have yet been met since they mostly relate to stages of implementation, it seems to be on schedule. This Work in Progress document involved considerable research and deep thinking into carefully planning this project and what it will entail. It was important to get all stages of this work in progress right since it will serve as a plan and a foundation for the rest of the project. Ethical approval was a key milestone to meet and was done so on time, likewise for completing the work in progress documentation. The following two weeks will be spent carefully designing a survey that will be posted online such as in dedicated Facebook Groups for League of Legends and perhaps gaming in general, as well as messaging contacts on the game individually. This survey will serve as requirements elicitation and will also highlight details about the potential audience of the website such as their average skill level. Information gathered from these responses will be

crucial in establishing user requirements and designing the site appropriately for its potential users. To gather the most results as possible and therefore being able to draw the most reliable conclusions, plenty of time must be allowed to gather these responses. The survey will be posted during the Christmas period whilst the project will be temporarily on-hold and potential respondents may be more available to spend time answering a survey.

After the requirements have been gathered and analysed, the bulk of the project work will begin. Plenty of time has been allowed to write the project report and this will be an ongoing process from then to the deadline as it will be written in stages, before and after particular stages of development have been carried out. During the 10 weeks allotted to writing the report, the first 2 weeks will also be spent designing the website and the following 8 weeks will be spent on implementation. From previous web development experience, 8 weeks to create a website does not seem too ambitious. Furthermore, time has been allocated to conducting user evaluation and making improvements to the site based on this feedback before it must be presented, and the project comes to an end.

References

Afonso, A., Carmo, M. and Moucho, T. (2019). Comparison of Visualization Tools for Matches Analysis of a MOBA Game. International Conference Information Visualisation, 23rd (IV), pp.118-126.

Gerber, H., Sweeney, K. and Pasquini, E. (2019). Using API Data to Understand Learning in League of Legends: A Mixed Methods Study. Educational Media International, [online] 56(2), pp.93-115. Available at: https://www.tandfonline.com/doi/full/10.1080/09523987.2019.1614250 [Accessed 28 Oct. 2019].

Highley, S. (2018). *Are you taking risks with risk assessment?* [online] Hastam. Available at: https://www.hastam.co.uk/are-you-taking-risks-with-risk-assessment/ [Accessed 28 Nov. 2019].

Leagueoflegends.com. (n.d.). What is League of Legends? | League of Legends. [online] Available at: https://na.leagueoflegends.com/en/game-info/get-started/what-is-lol/ [Accessed 14 Oct. 2019].

Mora-Cantallops, M. (2018). Exploring Player Experience and Social Networks in MOBA Games: The Case of League of Legends.

Preece, J., Rogers, Y. and Sharp, H. (2019). *Interaction Design: Beyond Human-Computer Interaction*. 5th ed. John Wiley & Sons, Incorporated.

ZHANG, C., ZHANG, Y. and YU, C. (2017). A Quantitative Analysis of Strategic Leadership in Teamwork: Inspirations from the Case of the Game Named League of Legends (LOL). International Conference on Management Science & Engineering, 24th, pp.103-109.