School of Computing UNIVERSITY OF LEEDS

COMP*3860* **Scoping and Planning Document**

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Programme of Study: BSc Information Technology (Industrial)
Provisional Title of Project: Replace the obsolete ABSP ratings system with an interactive database
Name of External Company (if any)**:** The Association of British SCRABBLE Players (ABSP)
Supervisor Name: John Stell
Type of Project: Software Product
NOTE to student*: ensure you have followed the instructions in the VLE for the writing of this report and you have discussed the content with the supervisor well in advance of the deadline for submission.* ***An electronic version*** *of this report in pdf must also be submitted via the appropriate module folder in the VLE; with filename of the format* *<surname><year>-MPR (e.g. SMITH15-MPR.pdf)*

Signature of Student:	**Date:** 03/02/2015
Assessor *(leave blank)***:**	

Contents

1. SCRABBLE

SCRABBLE is an American family board game which was trademarked in 1948 and is currently owned by Hasbro. However, the game went through several iterations, and the originally invented in 1933 by Alfred Mosher Butts under the name of LEXICO and later CRISS CROSS WORDS.

It wasn't until Butts met entrepreneur James Brunot that the games rules and design were refined and the name SCRABBLE was trademarked and widely distributed.

The game is a uses anagrams created in a crossword puzzle format. Players create words on a game board using tiles of letters placed vertically or horizontally. Each letter tile also features a score which determines how much a letter is worth. The aim of the game is to outscore your opponent by creating longer or more complex words.

Players take turns to create words on the board and start with 7 random letter tiles. Each time letter tiles are used up in a turn, a player will gain the equal number of tiles at random so to ensure the player starts each turn with the same number of tiles. Words made after the first round must also use at least one from an existing word on the board.

Figure 1. A standard SCRABBLE board game

SCRABBLE is sold throughout the world in many formats including the classic board game, junior edition, travel edition and electronic games. In America, 3 out of 5 homes contains the game in at least one of its iterations (SCRABBLE, 2015).

2. Introduction to project

This project will be presented in the form of a software product accompanied by a report. The completed product will be delivered in a position to replace the current system completely.

2.1 Context

The Association of British SCRABBLE Players (ABSP) is a non-profit association formed in 1987 which works to promote playing the game of SCRABBLE and co-ordinates tournaments for SCRABBLE players in the United Kingdom.

In addition to this, the ABSP also provisions and maintains a player rating system for its members.

The association operates a website that they use to disseminate information to their community such as news articles, tournament timetables and content related to the game of SCRABBLE.

Currently the website is the location where individuals can browse the player ratings of registered members in order of rank, name or by the individual clubs they are members of. The ratings are calculated from players' tournament results and an updated list is then published on the website.

This project aims to replace the current ABSP ratings system which has been deemed as obsolete and replace it with an interactive online database.

The stakeholders for this project are:

Derek Sergeant – Derek is the project owner and will act on behalf of the ABSP. He will be the source of all information and correspondence regarding the association's website or data.

The ABSP – The association will be the beneficiaries of the interactive online database and will also maintain it once the project is complete. Although Derek Sergeant will be representing the association for the duration of the project, they will have a vested interest in its progress as it will change how their website currently operates.

ABSP members – SCRABBLE players who are registered with the ABSP will benefit from the project as it will provide them with a more effective way of viewing their rankings on the website in addition to how they update tournament results. They may also be interested in knowing that any personal information that the project requires is handled safely.

2.2 Problem statement

The problem initially proposed was ‘Replace the obsolete ABSP ratings system with an interactive online database.’

Currently UK SCRABBLE players collate their own records of tournaments that they attend that are then sent to the ABSP. The ASBP takes this information and calculates player ratings using a bespoke piece of software. All rating records are stored on a database and rating lists are extracted from the database and uploaded to the website manually.

There is currently no functionality for a player to submit or amend their own records directly to the database. In addition, players cannot browse their own results from past tournaments on the website.

The problem creates a need for a secure process whereby players can access and modify the online ratings list. Any potential solution must consider some form of validated access for players to add or modify their tournament results as maintaining the integrity and security of the database is essential.

Solving the problem will give players functionality that they previously did not have which will enable them to examine their records on the website with more control. A solution will also provide automation of the process of updating and displaying player ratings as changes will be made by players and the ABSP will no longer be required to manually upload rating lists to the website.

2.3 Possible solution

The requirements of the problem must first be fully ascertained and addressed with the project owner to minimize confusion before the solution is attempted. A full analysis of all requirements will determine what criterial any solution must meet.

A potential solution to the problem would be to use a MySQL database that can be accessed and modified on the ABSP website in a secure set of pages. Players will be able to log into a section of the website using validation of their credentials and will be able to add or modify their tournament results using an interface.

Firstly players will log into the secure are using secure login credentials. These would most likely a combination of email address and password. As each player must be a registered member of the ABSP to be part of the ratings system, credentials could be associated with each registered member.

Once logged in players will use a series of online forms to modify their tournament results. This can be achieved by using PHP code on webpages to directly update records in the MySQL database tables. Many functions exist to perform these actions (Php.net, 2015).

The pages will be presented as simple online forms within the existing ABSP website and will follow the overall design and branding of the organisation. The solution will integrate seamlessly with the existing infrastructure of the website.

PHP within the pages of the site will also create the functionality for players to browse records from within the database and create multiple views by filtering and ordering results. An example of this in practice can be seen on the North-American SCRABBLE website, cross-tables (cross-tables, 2005). Columns can be reordered based on specified criteria by reading directly from the database.

This solution would replace the current obsolete system with an interactive online database that would serve all of the needs of the client. In addition, any solution used must be capable of accommodating the tournament rating calculation that is used to provide a player's rank.

Modules that have been studied which are relevant to this project are:

COMP3442 Usability Design – The module taught design fundamentals in regards to responsible design practices. The deliverable produced in this project will adhere to strict standards expected of by a professional software release in terms of usability. The deliverable will also comply with modern accessibility requirements.

FOEN9001 Industrial Placement Year – This module provided practical experience of working alongside clients to provide software deliverables within tight deadlines. It has also given the opportunity to learn specific technical knowledge of topics relevant to this proposed solution. Namely, front-end web development, working with PHP and MySQL databases. Another skill that has been acquired from this module is writing reports tailored for various levels of perceived knowledge. This included non-technical members of the public and senior business managers. This will be invaluable in keeping the report to a correct tone and level of detail.

COMP2745 Requirements and Evaluation – The module aided the project in how to identify requirements effectively and will continue to be useful in determining how to evaluate the project deliverable in terms of suitability and adherence to the requirements.

COMP1745 Web Development – Web development has provided a good foundation of knowledge for creating responsible content for the web. This includes accessibility needs of users and common practices and approaches. Knowledge gained in this module can be directly applied to producing a deliverable that is of a professional standard.

COMP1551 Core Programming – Core programming has provided exposure to a plethora of programming languages and approaches to developing software to provide solutions to numerous diverse problems. The experienced gained from this module will be helpful in understanding how to develop and implement an efficient and effective solution to the problem.

2.4 How to demonstrate the quality of the solution

The quality of the solution will ultimately be judged by its success as a replacement for the current obsolete system. The solution must satisfy all of the requirements detailed in the problem statement.

Standards for human computer interfaces (HCI) and usability (BEVAN, 2001) can be categorised into 4 sections are:

- A product's use within its particular context
- An organization's ability to deliver a design that is user-centred
- A product's user interface and interactions made with it
- How the product was developed including the processes followed

A way of addressing some of these categories would be a user study of the new system carried out by ABSP representatives and potential users of the system and evaluate the responses to determine their overall opinion of the solution from a user interface standpoint.

The deliverable could also be measured by how it adheres to recognised design principles in regards to how websites should present information. An evaluation into how well the solution follows the Web Content Accessibility Guidelines (WCAG) should also be an indication of the level of quality it attains. For example, how the solution presents text or images and also if it is structured well (W3C, 2005).

3. Scope for this project

3.1 Aim

The overall aim of this project is to replace the current obsolete ABSP rating system with an interactive online database. This will create new functionality which will enable members of the ABSP to input their own results from tournaments. Secondly, it will make it possible for the ABSP website the ability to interact with the database to display ranking information in multiple views within its pages.

A key overriding theme of the project is to automate processes which currently require human involvement due to inefficiency. For example, inputting player results into the offline database or manually placing player rankings on the website.

3.2 Objectives

The first objective will be to study user interfaces of similar systems to ascertain the best design approach in regards to usability design and use knowledge that is obtained to inform the design process. This will also be included in the final report.

The next objective will be to produce a conceptual design of a suitable replacement system that will meet the requirements detailed in the problem proposal. This design will be negotiated and finalised with the project owner. This will then be followed and used as a guide when creating the software product. The design will take the form of a PDF for demonstration to the project owner. In addition the conceptualisation will also be present in the final report as proof of completion.

Once the design has been agreed upon the next step will be to create a high-fidelity prototype of the solution using an offline facsimile of the current ABSP website. The new interactive database will be implemented in a testing environment and the new functionality stated in the requirements will be fit for examination by the project owner. At this stage, feedback can be given by the project owner and any changes to the solution's requirements can be put forward. If requirements are altered then it may be necessary to redesign and create a new prototype. Any changes will also be documented in the final report.

The completed high fidelity prototype will be saved upon completion and submitted as evidence of the process.

The final objective will be to build, install and test the solution on the ABSP live website. This will be the final stage of the project and proof of completion will include the source code of the system, a user evaluation of the finished product in the final report and feedback from the project owner.

It would also be useful to ascertain if the solution could be applied to other similar associations that operate a membership that provides player ratings. Possibly SCRABBLE associations from other parts of the world. For example, The South African Scrabble Scene (SCRABBLE SA, 2015).

3.3 Deliverables

The project will produce the following deliverables:

- an entity relationship diagram of the design for the database that the system will use
- a user manual for the software product for instructions and maintenance
- design feedback and recommendations by the product owner
- prototype feedback and recommendations by the product owner
- user study of the finished solution using ABSP members
- evaluation of the finished solution using ABSP members and project owner

4. Project schedule

4.1 Methodology

As this project is a software product, it is felt that the best way to proceed will be using an iterative approach. This will allow the project to be broken down and clearly show the development of the final product in easily manageable stages. As the objectives follow a logical order where each deliverable is dependent on the completion of another, an iterative approach can be implemented without disrupting the flow of the project.

All stages of conceptual design, high fidelity prototype and the finished solution can all facilitate multiple iterations based on ongoing feedback from the project owner.

This iterative approach can also accommodate changes to the project scope as any new requirements can be addressed through further iterations.

4.2 Tasks, milestones and timeline

Figure 2 shows the timeline of the project. Each task has been allocated sufficient time for completion and any overlapping of tasks should not occur with exception of the report itself as it will be an ongoing process until the project deadline.

A weekly meeting has been scheduled with the project supervisor and further need of communication can be included in the timeline as needed. Likewise, any meetings with the project owner can be scheduled into the timeline.

A journal of all daily activity will be in use throughout the project to aide reflection and to support the process.

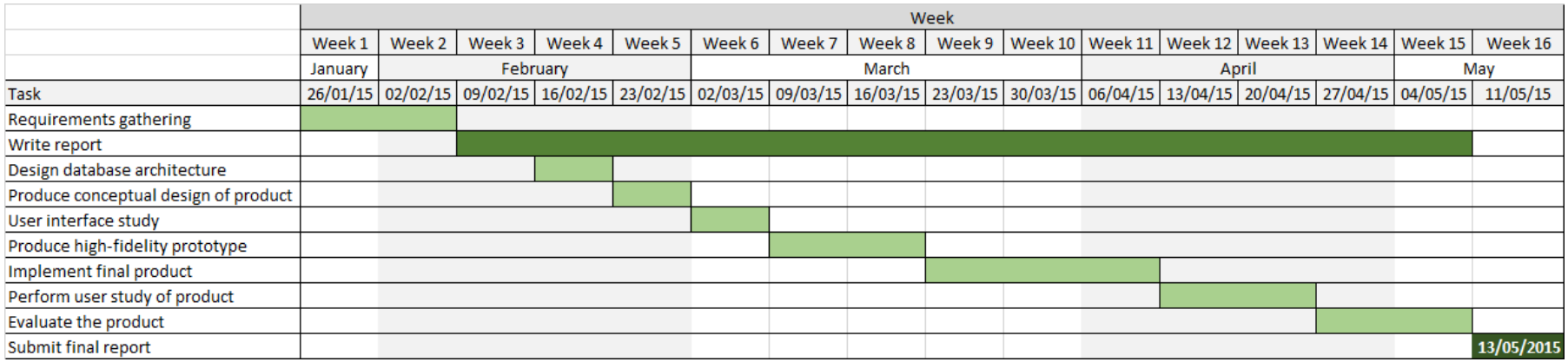

Figure 2. Gantt chart of project plan

4.3 Risk assessment (if appropriate)

The main risk associated with the project is the continued involvement of Derek Sergeant. As Derek is the project owner and the representative of the ABSP, his participation is essential.

If Derek was to decide to end his affiliation with the ABSP at any point during the project it would be difficult to proceed. At this stage, there is no suitable contact who would be available in the event of Derek's departure.

One other possible risk is that due to issues with security access to the live website. Derek is unable to provide an accurate estimate of how long any changes that are submitted to the live site will take to go live. This has potential to cause delays.

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Appendix A. How ethical issues are addressed

Although the software product will use personal information from ABSP members, at no time will access to this data be given.