Integrated Project

Compantion

A Tournament Management System

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1 Introduction

Currently at the University of Bath all sport fixtures, scores and information are managed individually by the committee of that particular sport. That means every week there will be an individual who is in charge of creating league tables and fixtures all from scratch. At the moment there is nothing that makes the process of organising sport easily. The issue that this generates is the time it takes for all the information to be put together in little time, that there is nothing that all sports can use to make this process simpler and that not everyone at the University get to be updated on how our sport teams are doing.

Therefore for our integrated project we aim to create an website with an integrated social networking that will have all of the University's sport fixtures, league tables, individual achievements that will be available for everyone. By combining our website with FaceBook's API we will be able to include a social networking aspect to our project, we will be able to update information without difficulty and provide a platform that will allow all University student to get involved in Bath sports teams.

2 Project Aims

The overall aim of this project is to create a fully functioning, dynamic, league and tournament management tool for use within the University of Bath. The system is primarily designed with sporting competitions in mind but should be applicable to others such as the video game competitions BUNCS[1] hosts.

Our system will support three different types of tournament: league tournament; knockout tournament (single elimination format) and a group and playoff format. The league format will allow the users to create a standard league where each team can play each other once or twice - home and away. The knockout tournament will allow the users to create a bracket with numbers of teams - including numbers that aren't powers of 2, therefore necessitating byes. The final format can allow the users to fully customise number of teams in each group and how many teams will make it to the knockout stage of the whole tournament.

The system will also intertwine social networking to create a more student like environment. This will lead to greater organisation of University competitions as well as providing that "official" feeling to events.

People will be able to prove their achievements and share with non-university friends and family, bringing an extra dimension to University competition. It will no longer be confined to invite only FaceBook groups.

[1] `http://buncs.com/`

3 Project Milestones

In order to reach this overall aim, we can break down the system in to measurable objectives that will contribute towards the final product:

- Designing the data structure of the tool, focusing on our objects and how data should be stored within them.
- Designing the flow of our tool, the different states that are going to be traversed by the user.
- Implementation of a User Account System with differing roles, including but not limited to "League Administrator", "System Administrator" and "General User".
- Implementation of a fixture list creation algorithm.
- Implementation of a tournament creator.
- Implementation of a simple league table system that will be updated according to entrance of results.
- Implementation of social networking either via FaceBook or by using our account system.
- Ensuring all of the above is presented in a suitable interface. (Geared towards university students)

Of course, there are many objectives that fall within the above and due to the iterative nature of the project, we could even go above and beyond what is outlined.

4 Market Research

4.1 Tournament App

The Tournament App by *SmartApps NZ for* iPhone, iPod touch and iPad provides a generic tool for creating and maintaining a competition. The application offers a wide range of features to aid the organiser's duty.

A choice between a round robin, Knockout and a round robin with Knockout final stage can be made as the the format for the tournament, this truly gives the user freedom over the tournament; the choice between formats gives potential users so much more freedom when organising a tournament.

Fixture lists can be viewed showing future matches and also show previous rounds' fixtures and results. Being able to view future fixtures and show previous results gives a full story of the tournament; you would never see a sports website without showing fixtures and results of a tournament.

Tournaments can be saved and reviewed, this gives the program the chance to manage multiple tournaments. What would the point be in just managing one tournament? Previous tournaments can be reused which is incredibly vital to reduce the time needed by the user to manage the tournament.

The applications has received positive reviews, although some improvements have been stated in some. One reviewer writes, "The things I would like to see added are: the option to have a 3rd place playoff after the semi-finals; an option of removing the draw column in the league table as there's no such thing as a draw in badminton; a separation line on the league table to show the qualifying positions. It would also be nice if you could email the results to yourself." These are all issues of customisation which is a recurring theme of good tournament organisers, therefore we must offer customisation to give users free reign.

4.2 Konkuri

Konkuri is a free to use comprehensive tournament organiser that allows a large amount of customisation and freedom for the user.

Konkuri provides a website purely for a tournament a user creates so that users who are partaking in the tournament can view their progress and see the results and upcoming fixtures. A similar feature may be beneficial to our system.

This system also offers the choice of multiple tournament formats, with some limitations implemented: a round robin tournament has a maximum of 24 participants; Knockout tournament allows 128 participants and a group stage with playoff format allows 96 participants. The Knockout format allows an optional 3rd/4th place playoff which isn't offered on the iPhone/iPad app. The group stage and playoff format allows many customisations, including how many in each group, how many qualify to the playoffs and a repechage is available.

Participants are able to be managed on Konkuri; users registered on Konkuri can be linked to the relevant competitors in the tournament, whether they are in a single, double or team tournament. The number of participants can be changed after the competition has started.

Seeding can be automatically or manually generated, providing a schedule to suit the user. Dates and times are linked to these fixtures and competitors linked to the tournament are emailed when fixtures are rearranged. A set number of legs for each round can be added, like in the MLB playoffs.

Results can be shown as sets or points like in racquet sports. Results can be approved manually. Two competitors can lose a match via a double forfeit.

Tables will automatically update upon new results, with the points awarded in the table being able to be customised. If a match goes into a tie break situation, points can be awarded for a win or loss that occurs due to it going to a tiebreaker. Bonus and minus points can be awarded in the table too.

A wide range of default statistics are available depending on the sport for the tournament and custom statistics can be made. Statistics for each match can be shown with the match page showing

the complete breakdown.

The above examples don't have features that allow you to integrate the tournaments with social media, which is one of our main goals. This is a huge gap in the market we wish to fill up, sharing results and current tournament standings.

5 Systems & Languages

As one of the aims of the project is to integrate social media and for accessibility our implementation will be web based. The project will heavily rely on a *MySQL* database which prompted us to use the popular[1] *PHP* platform to build the website as it provides a simple interface to interacting with databases. The *Smarty* Template Engine[2] will be an integral component in project, allowing backend logic to separated from the presentation.

The templates will be HTML5 compliant and styled with Cascading Stylesheets (CSS). The project may utilise the *jQuery* JavaScript (JS) library to enhance the website content but should remain accessible with JS disabled.

FaceBook Social Plugins [3] will allow the website to be integrated with Facebook which exposes the following functionality:

- Facebook users can like the facebook page from the website.
- Facebook users can share content from the site with each other.
- Content from Facebook pages can be embedded on the website.
- Allow Facebook users to comment on website content.

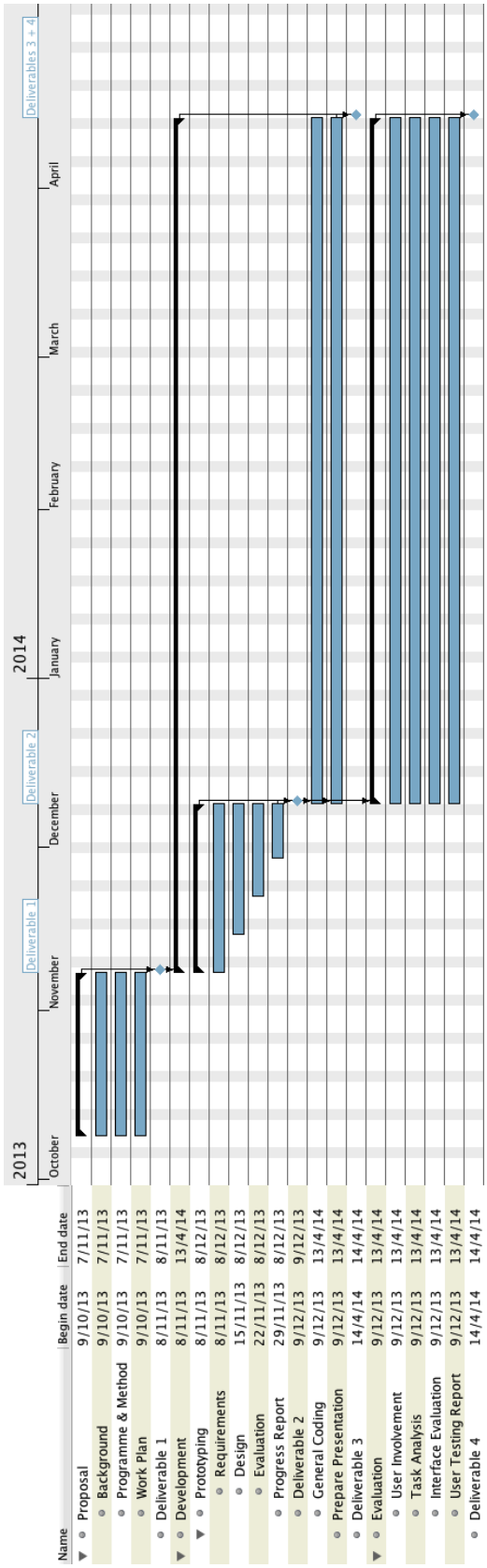
The FaceBook API [4] exposes "Feed and Share Dialogs" in which the user can be prompted to post content, whilst this functionality is usually used for a promotional purpose we may wish to implement a prompt to FaceBook users to share the results of a tournament.

[2] `http://www.smarty.net/`

[3] `https://developers.facebook.com/docs/plugins/`

[4] `https://developers.facebook.com/docs/reference/dialogs/feed/`

6 Work Plan


2013
2014
October
November
December
January
February
March
April
Deliverable 1
Deliverable 2
Deliverables 3 + 4
Name
Begin date
End date
Proposal 9/10/13 7/11/13
Background 9/10/13 7/11/13
Programme & Method 9/10/13 7/11/13
Work Plan 9/10/13 7/11/13
Deliverable 1 8/11/13 8/11/13
Development 8/11/13 13/4/14
Prototyping 8/11/13 8/12/13
Requirements 8/11/13 8/12/13
Design 15/11/13 8/12/13
Evaluation 22/11/13 8/12/13
Progress Report 29/11/13 8/12/13
Deliverable 2 9/12/13 9/12/13
General Coding 9/12/13 13/4/14
Prepare Presentation 9/12/13 13/4/14
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Evaluation 9/12/13 13/4/14
User Involvement 9/12/13 13/4/14
Task Analysis 9/12/13 13/4/14
Interface Evaluation 9/12/13 13/4/14
User Testing Report 9/12/13 13/4/14
Deliverable 4 14/4/14 14/4/14

References

[1] W3Techs. Usage statistics and market share of php for websites, 2010. http://w3techs.com/technologies/details/pl-php/all/all.

7 Contributions

All team members are to receive an equal percentage to their marks.