Interface Development in an Internet Age
22C:198 Programming Project Proposal

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Introduction

Creating a basic website with HTML is a relatively simple process. However, this does not imply that you will be able to create the next Yahoo! or Google, which draw millions of visitors per day. Developing a rich and easy-to-navigate website filled with user services and resources is one of the major challenges facing companies on the Internet today. Users want information faster and easier to access than ever before. The winners of this great challenge are often well-rewarded with a forum of millions of users a day devouring products and services.

For this project I will be showcasing various user interfaces and services that drive value toward the end user in the form of ease of use and efficiency. The website I develop will automate the annual American tradition of competing to see who can guess the winners of the NCAA Basketball Tournament. The website will allow groups of users to logon and compete against each other to see who can earn the most points by selecting the correct game winners throughout the tournament. Through the development of this site I will explore various advanced dynamic user interface designs and choose those that will best suit this particular site and most web sites in general.

Motivation

The basic motivation behind this project is to create advanced dynamic user interfaces that provide an enriched and simple experience for the end-user. In the process I will learn client-side and server-side programming techniques and receive more practice in developing database driven websites.

The second motivating factor is to create a tool that will be of use for actual Internet users and to develop this tool with a near-perfect user interface. At the end of the day, providing useful products and services to the end user is what keeps Internet users coming back to a website. Creating useful features can often be much more difficult then creating the most cutting-edge technology.

Basic Functionality

The basic aspects of the website can be divided into three parts corresponding to three different levels of users. The three levels are tournament administrator, group administrator, and user.

The tournament administrator sets up the NCAA Tournament static variables which will be constant for every user but will vary by year. These variables will include data such as what teams are in the tournament, how the teams are organized on the tournament diagram, as well as which teams win throughout the tournament play. The tournament is created and updated through a web interface. The tournament administrator will need basic web navigation skills, detailed information about the tournament, and a high level of integrity in order to have the role as tournament administrator. In general the site will only have one or two tournament administrators.

A group administrator may setup a competitive group and invite people to join the group to compete against each other. Group administrators need only the email addresses of people they would like to invite to compete along with a few basic decisions about settings that may be unique to a particular group. The group administrator will usually also play the role of a normal user.

The user is invited into a group through an email message automatically generated through input from the group administrator. The user comes to the website by clicking on the link in the email. The user registers and selects their pick of winners for the tournament. Once the first real-world tournament game is played the users are no longer allowed to change their picks. Users will be able to generate reports that detail the ranking of users based on their current score and their potential score. Scoring will be based on how well a particular user's tournament diagram matches up with the real-life tournament diagram; in other words, a function of the number of teams picked to win that actually won. Winners from each group are announced at the end of the tournament as well as an overall winner. Users will also be able to subscribe to different events on the website such as updates to the tournament diagram. If a user subscribes to be notified about updates to the tournament diagram, the user will receive an email every time there is an update made to the tournament diagram. The users can also participate in group and/or site-wide discussion boards. Basic user maintenance such as logging in, forgotten passwords, and changing password options will also be handled.

Basic Web Interfaces

The site will be made up of the following interfaces:
1. Welcome Page (Public)
2. Guide/FAQ (Public)
3. Group Application and Setup (Group Administrator)
4. Login Page (Public)
5. Invite Feature (Group Administrator)
6. Tournament Diagram with movable objects
      a. Setting up the Tournament (Tournament Administrator)

b. Entering User Picks (User)
c. Updating (Tournament Administrator)
7. Status Reports (User)
8. Change Password (User)
9. Forgot Password (User)
10. Discussion Boards (User or Public)
11. Subscribe to Events - may be a part of each individual interface instead (user)
12. Tournament Administration Page

Implementation

The interface for all levels of users will be completely web based. The web pages will be served by a Microsoft Server 2000 system. The system will also handle data storage through SQL Server and will operate the .NET Framework SDK. The website will implement such programming technologies as ASP.Net, VB.Net, and Java Scripting. The server machine will consist of a 400 MHz Dell Dimension desktop running the Windows Server 2000 operating system, IIS, and SQL Server. Code development work will be done in FrontPage, Notepad, and Visual Studio.Net.

Deliverables

Deliverables for the project will consist of the website itself along with online and physical documentation of the project and lessons learned. Reusable code segments will also be provided for creating advanced features such as drag and drop objects.

Examples of the Competition

Many websites already host this type of service during the NCAA basketball tournament and some websites host similar sports services all year round. Some examples of these sites include www.foxSports.com, www.yahoo.com, www.rascon.com/poolsheets, and www.go-native.com/tourney. Yahoo's focus is to be everything on the Internet for everybody, while Fox Sports attempts to be everything sports for everybody; both have a heavy focus on the United States. The two later websites mentioned above are set up almost exclusively for the NCAA tournament. I could not get an exact feel for how any of these sites actually allowed you to make team picks for the tournament because they are all currently locking visitors out of this function until the teams that will be playing in the tournament are released for the 2002 year.

The Fox Sports site appears to use the most advanced Internet technologies. Most of the site is done using Macromedia Flash software. One example of a tournament bracket it has setup for World Cup Soccer can be seen by looking at Figure 1.1. Fox Sports also has fantasy tournaments setup in which users logon and pick individual players to play on the user's fantasy team. Users must pay a fee to play in some of these

tournaments and have the chance to win thousands of dollars. The site features dynamic menus for navigation but not for setting up tournaments.

Yahoo's sports section features the same services as Fox Sports using a much less advanced interface. Yahoo also has a feature in which you can display tournament brackets in a printable format (Figure 1.2). Yahoo also features news about college basketball players during the off season and the results of the previous season and tournament.

Both www.rascon.com/poolsheets/ and www.go-native.com/cgi-bin/tourney have fairly primitive and simple forms for entering tournament information. I was allowed to fill out the form for creating a tournament on both sites but I could not enter any of my team picks. As I was applying to start my own tournament I had to choose a scoring method and decide if I wanted to score "Upset Bonus Points" to users who correctly picked teams who were generally expected to lose based on their seed ranking.

I plan to implement many of the above features such as different scoring models and printable bracket sheets. I will not be charging a fee for entering a tournament pool nor do I intend to have as many other services and features as Yahoo and Fox Sports. I do intend to have message boards, drag and drop objects, and a way of viewing tournament data from past years of tournament play. These features were not very prevalent among the sites I viewed.

Conclusion

The process of developing this website will allow me to obtain real-world experience with web-based programming using cutting edge tools. I also hope to showcase new and revolutionary ideas for user interface development that will enrich the end-user experience and provide ease of use. By documenting lessons learned I hope to aid student projects in the future. At the same time I hope to provide a cool web service to the public.

ID		Task Name	Duration
1		Install Server	1 day
2		Install Visual Studio.NET	1 day
3		Welcome Page	1 day
4		Draft Pages	2 days
5		Create Database	2 days
6		Tournament Administration Pa	3 days
7		Tournament Diagram	8 days
8		Group Application and Setup	2 days
9		Login Page	2 days
10		Invite Feature	2 days
11		Forget Password	2 days
12		Change Password	2 days
13		Event Subscription	2 days
14		Status Reports	2 days
15		Guide/FAQ	2 days
16		Weekly Meeting	31 days
24		End of Class	0 days

Figure 1.1 – World Cup Tournament on FoxSports.com

Figure 1.2 – NCAA Tournament on Yahoo Sports