

The Charlotte Project: A World Wide Web Learning Project

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Abstract

As the World Wide Web becomes a growing source of credible information, academics are challenged to implement an Internet component into curriculums. The Charlotte Project, a student project created by the author, requires students to assemble a reference guide containing relevant web sites and then present the project results to an audience. Students search for sites throughout the academic term, capturing site information in a database. At the end of the term, a professional product is compiled. This paper describes the project goals, process, point structure, and data capture forms. The Charlotte Project has many educational benefits, including hands-on computer time, development of Web browsing and searching skills, critical evaluation of web sites, and application of database management techniques. Observed student and instructor learning instances are discussed. Project teaching notes include suggestions for application to various disciplines, a project timetable, student-group application, and technology requirements.

Introduction

The Internet increasingly contains information to which students should be exposed. However, the pace at which the Internet is growing may be an obstacle to implementing it into the classroom. Accounting curriculums could ignore its presence, an option that may broaden the gap between faculty and the functional world in which students learn [Hannah, 1998]. Surveys revealed 59% of the accounting *faculty* did not use the World Wide Web (Web) component of the Internet at all [Debreceeny et al., 1996], while less than 25% of undergraduate and 39% of graduate accounting *courses* include some use of the Internet [Baker and White, 1998]. Of the faculty currently using the Web in their accounting courses, the three primary objectives of such assignments are (1) to familiarize students

with the Internet, (2) to locate current material, and (3) to provide a resource for research projects [Baker and White, 1998]. The Charlotte Project is a comprehensive, manageable Internet project that serves all three of these objectives.

The Charlotte Project

The Charlotte Project is used in a small, graduate Accounting Information Systems (AIS) course. The project spans the semester. The goal of the Charlotte Project is to assemble a reference guide for students to efficiently access accounting resources on the Web and then to present the guide to interested audiences. The expected educational benefits are to:

- enhance Web browsing and search skills

- learn to critically evaluate Web sites
- enhance written communication and oral presentation skills
- provide experience working as part of a group.

Process

Students are assigned to small teams. Throughout the semester, each team of students browses and searches the Web for “accounting” sites. These can include sites of firms offering accounting services, repositories of information sources (e.g., IRS code), educational reference materials, and other sites that are useful to

practicing accountants and/or students. Table 1 presents a sample table of contents for sites. To preclude students from spending inappropriate amounts of time searching for sites, each team is limited to *two* site finds a week. To receive credit for a site find, students enter information about the sites into a password-protected database maintained on a local area network. The database software (Microsoft Access) is very user-friendly. Detailed knowledge of databases is not necessary for the Charlotte Project.

Table 1: Sample Table of Contents

Major Link Sites
 Tax Sites
 Auditing
 Financial Accounting
 Governmental and Non-Profit
 Associations and Organizations
 International Sites
 Publications and Journals
 Legal Sites
 Finance and Investing
 Student Links
 Technology Sites

Throughout the semester, teams take turns managing the project. Project management includes verifying accuracy of information captured about sites, backup of the database, and identifying and discussing the two best sites found during the previous week. Class time is not allocated to finding the sites. The students design and compile a physical product that summarizes and/or lists the web sites they found. The class may choose to organize the sites alphabetically, by rating, by topic, or some combination of these. The purpose of creating the

product is to organize the web sites in a meaningful, useful manner. A full description of the Charlotte Project is provided in Appendix I.

Project Points

Project points earned by the students should be indicative of the importance of and the amount of time devoted to the project. In my opinion, the Charlotte Project is worth between 20% and 25% of the available course points. During the site finding stage, teams earn 3 points for locating a unique site. Limiting finds to two per week during the first 10-weeks of a semester allows teams to accumulate a total of 60 points from site finds. Project management and the finished product carry a 10-point and 50-point value, respectively. The presentation of the project to an audience comprises the remaining 30 points of the total 150 project points.

Site Forms

The instructor creates the original database "forms" that students use to capture information about the site (see Appendix II). However, students are encouraged to propose changes to the forms if they identify other useful information. Examples of fields on the form include: site name, URL address, and sponsor of site; purpose and intended audience of the site; unique features of the site; the name of the students who find the site; how the site was located; and various qualitative ratings of the site. The Charlotte Project requires students to rate each site on four dimensions: (1) usefulness to a practicing CPA, (2) usefulness to an accounting student, (3) effectiveness of site design, and (4) an overall rating.

Student Learning

Discussions and surveys of students in the course have identified the following benefits of the Charlotte Project. First,

students saw the finished product as one they will use throughout the remainder of their academic program and on into their professional careers. They discovered "major sites" with many links to other web pages. Often these major sites were key to finding other sites. Second, they experimented with different browse and search techniques. They learned the importance of keyword choice and search engine choice. Third, they quickly lost their fascination with superficial sites. In fact, a top rated site had *no graphics*. They also learned to distinguish between commercial sites selling a product and commercial sites providing a useful, complimentary resource. Fourth, they were introduced to many government and nonprofit organizations that provide extensive information on the Web. Fifth, they enjoyed working with database software, which complemented other course assignments. Finally, they began to think as future professionals. Rating sites aimed at professional audiences forced them to consider information useful in practice.

Instructor Learning

The Charlotte Project can provide the instructor with a current and fairly comprehensive composite of relevant Internet resources. More importantly, the finished, deliverable product can be organized by topic, so an instructor who focuses on teaching taxation, for example, could easily go to the listing of tax sites.

From a course management perspective, students can complete the project *entirely outside of class*. Students can search for sites anytime if they have Internet access outside of the classroom. Sites are added to the database maintained in the computer lab. The final product is compiled during group meetings.

Presentations can be made to audiences outside class. None of the phases of the Charlotte Project require significant class time.

Teaching Notes

Project Timetable

The Charlotte Project spans an academic term, with students finding sites during approximately the first two-thirds of the term. This leaves the last third of the term for product creation and presentations. The site finding limit may be adjusted in some weeks for non-project reasons. For example, during an exam week, the students may not be required to find any sites. Each team is given the opportunity to find a maximum of 20 total sites for the term. Students feel the pressure of increased competitiveness of finding sites towards the end of the site-finding phase of the project. No more than 10 teams are recommended (resulting in 200 total sites) to guard against overt competitiveness. If a class size exceeds 30 students, a group approach is recommended.

Group Approach

Each team consists of two to three students. In a larger class, teams can be further combined to form several groups. The groups are assigned sub-categories for finding sites. For example, accounting sites could be broken into tax sites, governmental sites, auditing sites, financial and managerial accounting sites, and international sites. Teams within a group compete amongst themselves in finding sites related to their assigned sub-topic. Each group then completes a single group product and presentation to the class on their topic.

Site Evaluation

Since web site evaluation and critique is not a focus of accounting courses, the students are provided with general guidelines on evaluating sites (see rating categories in Exhibit I). These guidelines include speed of display, functionality, ease of use, navigability, and content value of a site. However, previous exposure to the Internet varies widely amongst the students, and few students have formally evaluated web sites. Their criteria for rating sites becomes refined as they are exposed to sites throughout the semester. To reduce rating variability, the instructor may wish to devote more time to web site evaluation. For example, at the start of a term I have students select and then independently rate non-accounting sites. Then, the sites receiving a wide range of ratings are reviewed in class. Also, each student's mean and median rating for a group of sites is compared to the class, highlighting overrating and underrating student tendencies. To further minimize inconsistency, teams review project site ratings for reasonableness as part of their project management responsibilities.

Student Presentations

If all teams are seeking sites regarding one broad topic, students will be familiar with the sites. In this case, audiences outside the class are most appropriate for student presentations. For example, two recent audiences were student-members of an accounting organization and faculty attending a weekly "brown bag" forum. For the student audience, the presentation focused on the sites most useful from a student perspective. For the faculty audience, the presentation focused on the structural, administrative, and educational merits of the project. If teams are organized into groups assigned to sub-

topics, group presentations within the class are more appropriate.

Technology Requirements

Students should have Internet access at home or a university computer lab. The database can be maintained in the business school on a local area network. Ideally, the class should be conducted in a classroom with permanent computer and projection equipment. However, this quantity and quality of technology is not necessary to administer the project. The students can manually collect information on sites or compile the information using a spreadsheet, rather than database software. Classroom computer availability is only used to display and discuss sites already found or illustrate use of the database. If

an Internet connection and/or computer is not readily available in the classroom, once or twice a semester the class could be held in a location with such technology.

Application to Other Disciplines

This project is neither discipline-specific nor technologically daunting. It can be used in any accounting class or other non-accounting class. For example, a finance class could search for investing sites. This paper presents an application of the project that is broad in scope. However, the project can be altered to fit a narrower focus. For example, a financial investing class can search for sites providing useful information to investors within five years of retirement.

References

- Baker, R. E. and White, C. E. (1998). Internet uses in accounting education: Survey results. Unpublished working paper.
- Debreceeny, R., Smith, G. S., and White, C. E. (1996). Internet methodologies and the accounting curriculum: A first look. *Accounting Perspectives, 1*, 107-124.
- Hannah, R. L. (1998). Merging the intellectual and technical infrastructures of higher education: The internet example. *The Internet and Higher Education, 1*, 7-20.

Appendix I: The Charlotte Project (Student Version)

A World Wide Web Project for AIS

Purpose

The tangible goal of the Charlotte Project is to assemble a reference guide for accountants, students, or business people to efficiently access *accounting* resources on the World Wide Web (WWW). The expected intangible benefits of the Project include

- 1) enhancing familiarity with the WWW
- 2) developing WWW search and browse skills
- 3) learning to critically evaluate WWW sites
- 4) acquiring and sharing of information contained at WWW sites
- 5) applying database management using database software.

Process

Throughout the semester, students should browse and search the WWW for “accounting” sites. These would include sites of firms offering accounting services, repositories of information sources (e.g., IRS code), educational reference materials, and other sites that would be useful to practicing accountants and students. Parameters on sites are discussed below. You will work in small teams. As teams find qualified WWW sites, a form should be completed (using established database), so that uniform information can be compiled about all sites. Each team will be project manager for one week (see project management below). Towards the end of the semester, the class will verify the accuracy of the information provided about each site. Class time will not be specifically allocated to finding the sites, though we may review located sites of particular interest during the semester.

Product

The class will have a great deal of latitude in developing the finished product. This is a *class* project, and all students will be expected to contribute to its development. There may be some minimal expense in the production of the finished product, and each student should equally share in this cost.

Project Management

The week your team is designated project manager, specific tasks should be performed. These include verification of the last week's additions to the database, review of ratings for those sites, backup of the database, and report to the instructor (see attached form). A project management worksheet is provided to assist in this task. You will also select two sites found during the previous week and present these to the class.

Points

Each WWW site found is worth 3 points for each student in the team finding the site. However, a maximum of *two WWW sites per week* may be submitted by each team. This will allow for each student to earn up to 60 points for his/her team finding 20 sites. Points will only be allocated if the site is (1) relevant and useful to accounting professionals or students, (2) unique or unduplicated thus far in the class findings, (3) current, and (4) properly added to the database. The professor reserves the right to reject point allocation for WWW sites for failing to meet the above criteria. A site is not considered “found” until the professor approves a WWW Site Summary Form completed by the group. Additional points are allocated to the finished project product (50), project management (10), and presentation of the project to an audience (30).

Ratings

The WWW Site Summary Form includes fields for you to evaluate the web site you have found. All scores should be from 0-100, with 100 being the best. *There is a significant learning curve in evaluating sites.* Therefore, you may revise the scores throughout the semester, as you become more familiar with the WWW and other accounting sites. You may also question other students' ratings of sites.

Use the following general guidelines in rating each site:

Score-CPA	How useful would a practicing CPA find this site?
Score-Student	How useful would an accounting student find this site?
Score-Design	How effectively has the webmaster designed the site? Consider quality of graphics, speed of the site, clarity of options, and overall ease of use.
Score-Overall	How does the site rate compared to other web sites?

WWW Site Summary Form

When a team finds a site they would like to add to the database for credit, do the following:

- Start Access software on any business school computer lab station.
- Open the Charlotte database (Classes/Acct671/Charlotte), password = wilbur.
- Click on the "Forms" tab; double-click on the WWW Site Summary Form.
- Forward to the next empty record, then enter the information on the site you have found.
- Be sure to complete all fields.

You may want to search the database to see if a particular site has already been located before you enter your site. To do this, click on the "Query" tab; double-click on the Site Finder query. If it is not already displayed, change the view to "Query Design" using the upper left button or the View Menu. Under the site address field, you will see the criteria [Address]="site address". Enter the address of the site you are looking for between the double quotations. Then run the query by pushing the "!" button on the task bar or selecting Run from the Query menu.

If at any time during the semester you feel we should be capturing information in addition to what is included on the WWW Site Summary Form, please bring it up in class. The class as a whole will discuss and vote on the issue.

Important

Some of you may have the knowledge to manipulate the data within this database. This project calls for all students to maintain the database integrity. You may only *input using the form or query*. You may not alter the actual database in any other way. The database will be frequently saved, so any suspect alterations can be detected. This is not a competition – all students can potentially receive the maximum points for locating sites.

Project Schedule

Week	Activity	Points
Weeks 2-7*	Find 2 sites/group/week	36 pts
Week 8	no activity - midterm week	
Weeks 9-12*	Find 2 sites/group/week	24
Weeks 3-13**	Project Management	10
Week 13	Database audit and cleanup	--
Week 14	Prepare final product	--
Week 15	Final product due	50
Week 15	Presentations	<u>30</u>
Total		<u>150 pts</u>

* site finds must be in database by *Friday, 5:00 pm* each week

** project management reports due on *Wednesdays* (for sites entered the previous week)

Charlotte Project
Project Management Report
For Week Ending _____

Task	Done By
1. Print entire database, sorted from newest to oldest record (LISTING report).	
2. For sites entered during the preceding week:	
a. review each record for completeness	
b. verify the accuracy of each address	
c. determine reasonableness for ratings	
3. Determine the two best sites of the week (to be presented in class)	
4. Backup the database on a clean diskette (filename = backupmdd)	

Comments or Problems Noted:

Project Managers: Name _____ Date _____
 Name _____ Date _____
 Name _____ Date _____

*Return this sheet, the printout of the database, and the backup diskette on **Wednesday** following the week noted at the top of the sheet. No late reports are accepted.*

Appendix II: Site Data Entry Form

The screenshot shows a Microsoft Access window titled 'WWW Site Summary Form'. The form contains the following data:

Name	Rutgers Accounting Web (RAW)	Score-CPA	90
Address	www.rutgers.edu/Accounting/raw.htm	Score-Student	100
Sponsor	Rutgers Univ.	Score-Design	90
Audience	CPA's, students, professors	Score-Overall	95
Purpose	largest accounting web site in the world	Updated	4/15/97
Features	Links to acctg. orgs, academic resources, university courses, SEC, other accounting resource web sites, IRS, and anything else imaginable	Finder	Herron
Located	many web sites link or to RAW		

Record: 1 of 153

Form View

Start Microsoft Access 3:43 PM

Note: This form was created using Microsoft Access ('97). While a password was required to access the database on the local area network, students were on the honor system regarding changes to the database. The project managers created weekly backup copies of the database.