ABSTRACT

At Seton Hall University we developed Asset, a Web-based academic survey system and evaluation tool to design, administer, and analyze surveys. This free, open-source project is widely used at our institution, and has even been approved for electronic voting. Other universities have also successfully deployed the project. In this article, we will introduce the Asset system, describe its design principles and capabilities, and compare it to similar tools. We will include a discussion of sample surveys using Asset, and briefly describe the requirements for installing the system.

INTRODUCTION

Since its beginning in the early 1990s the World Wide Web has been used to gather data. During the early stages, custom-made CGI scripts were used to collect and process data from Web pages containing simple forms. Today, form generation, data collection, and processing is routinely done using elaborate Web-optimized tools with acronyms such as PHP, ASP, JSP, or Servlets, and sophisticated database servers for background processing and data storage. From an abstract programming perspective, there is little difference in handling an online business such as Amazon.com, processing airline tickets and flight reservations, or distributing and evaluating online surveys for educational or scientific purposes. In each case, a mechanism must exist to (a) design and manage the information to present, to (b) collect the information efficiently from the customer, and to (c) manage, evaluate, and analyze the collected data.

In this paper I will discuss Asset, the academic survey system and evaluation tool developed at Seton Hall University. Asset is an open source online survey management system that is freely available to anyone affiliated with an educational institution, and can be installed under a GNU-like license on any server. At Seton Hall, Asset has been used since 2002, and is currently managing over 500 active surveys with almost 1.5 million data points. It is also used as the official electronic
voting system for the university. In addition, Asset has been installed at institutions such as Creighton School of Pharmacy and Health Professions, Raritan Valley Community College, and others. I will discuss the capabilities and limitations of Asset, talk about Asset’s technical requirements, and conclude with a discussion on lessons learned.

**ASSET CAPABILITIES**

**Asset** conceptualizes two types of users:

- A **registered user** can create and manage online surveys and analyze or download existing data. Registered users need an Asset username and password, and they must login to the Asset system to manage their surveys and associated data. A registered user can create and own any number of surveys.
- An **Asset subject** is an individual who fills out a survey created with Asset by visiting a specific URL. The authentication a subject needs to provide to take a survey depends on the survey parameters set by the survey owner.

When a registered user logs in to Asset using a standard Web browser, he/she sees a list of surveys he/she owns. He/she can edit existing surveys, create new ones, or analyze or download data for existing surveys. Any number of the following survey elements can be combined into a survey (see Figure 1):

- Multiple-choice questions with an optional text field to capture user input
- Groups of multiple-choice questions in table form, with the same choices per row, with an optional text field to capture user input
- Groups of questions in table form with choices mapped to a numeric scale
- Numeric fields that allow entry of arbitrary numbers
- Text fields that allow entry of arbitrary text
- Group of questions in table form where each row contains a text field for arbitrary text entry

*Asset*’s main design criteria is simplicity; thus, some more elaborate survey elements present in other online systems, such as, for example, con-

Figure 1. Some of Asset’s survey elements, displayed in “edit” mode