

# A General Purpose Online Survey Generation Tool

Ariunaa Chuluunkhuu  
Computer Science  
South Dakota School of Mines and Technology  
Rapid City, SD 57701  
ariunaa.chuluunkhuu@mines.sdsmt.edu

Jaelle Scheuerman  
Computer Science  
South Dakota School of Mines and Technology  
Rapid City, SD 57701  
jaelle.scheuerman@mines.sdsmt.edu

Bolor-Erdene Bundagaa  
Computer Science  
South Dakota School of Mines and Technology  
bolorerdene.bundgaa@mines.sdsmt.edu

Matt DesEnfants  
Computer Science  
South Dakota School of Mines and Technology  
Rapid City, SD 57701  
matt.desenfants@mines.sdsmt.edu

Jordan Ritz  
Computer Science  
South Dakota School of Mines and Technology  
Rapid City, SD 57701  
jordan.ritz@mines.sdsmt.edu

Antonette Logar  
Computer Science  
South Dakota School of Mines and Technology  
Rapid City, SD 57701  
antonette.logar@sdsmt.edu

Edward Corwin  
Computer science  
South Dakota School of Mines and Technology  
Rapid City, SD 57701  
edward.corwin@sdsmt.edu

Roger Schrader  
Computer Science  
South Dakota School of Mines and Technology  
Rapid City, SD 57701  
roger.schrader@sdsmt.edu

William Arbegast  
AMP Director  
South Dakota School of Mines and Technology  
Rapid City, SD 57701  
william.arbegast@sdsmt.edu

## **Abstract**

Online survey tools have become an increasingly popular way of gathering, collating, and analyzing data. The cost saving over traditional print and mail surveys is obvious, but the ability to interactively adapt the questions to the user and the instantaneous analysis that is possible, make online surveys particularly attractive. Free survey tools, such as Survey-Monkey, are available on the web, but the data gathered by surveys using these tools resides on servers which the author of the survey does not control.

One of the incentives for developing this survey tool was to meet the expectation of accreditation agencies that data will be collected on a regular basis from alumni and employers of graduates. The department of Mathematics and Computer Science has been surveying alumni every five years, but, with a 6 year accreditation cycle, more frequent data collection may be appropriate. The tool also fills a need for the Center for Friction Stir Processing by providing an easy mechanism for soliciting feedback regularly from industry and academic partners. Although the tool generates a web-based survey, it must be downloaded, and some minor system configuration is required before surveys can be deployed. However, the survey designer controls the data files. In some situations, the web-resident survey tools will be appropriate, but if the data being collected is at all sensitive, this downloadable tool should be attractive.

This paper demonstrates the functionality of the survey-generation tool using the CSC alumni survey as an example. The example shows how to use the GUI interface to sup-

ply questions, determine the type of responses, such as multiple choice or text, and how it generates the code for the survey and creates the database tables. It also discusses how the responses are stored and how the survey designer can create the queries to analyze the data using the graphical interface.

The tool was written in PHP and uses a MySQL database resident on the departments Linux server. A live demonstration will step through the process of generating a survey and viewing the statistics generated from the data.

## 1 Introduction

There are three major components of the survey process including form creation, form generation and data reporting. Form creation is the process of creating questions and choosing settings that will affect how the survey will be displayed. The settings and questions are saved in a MySQL database where they can be retrieved later in the surveying process. The form generation stage involves a survey taker visiting a survey page, which pulls data from the database, and displays it accordingly. The survey taker can answer the provided questions and submits the survey. The answers are saved where they can be parsed into a data report. After all the data has been collected, the information is collated into a data report, which displays a summary and graphical representations of the data collected.

**SOUTH DAKOTA**  
**M**  
School of Mines and  
Technology

Forms Filled forms Go to front page Logout

**How to use this page**  
On this page you can edit form which you are already created. In order to edit form you should fill **Form Name, Thanks, Stop processing this form by** fields. And then click submit.

**Form name** = What you want to say creating form.  
**Thanks** = Will you show a page which will display "Thank you for the submission" after filled this form.  
**Stop proce ...** = How long have you been activate this page

Form preferences HOME / Forms / Form Preferences

\* Required fields

**Form details**

Form name \* SOUTH DAKOTA SCHOOL OF MINES  
Thanks   
Stop processing this form by  December 1, 2009

Submit Cancel

SDSMT

Figure 1: Creating a New Form

## 2 The Survey Creation Tool

To begin, an administrator logs in to the survey tool to create a new form. He or she is presented with several options for creating an customized survey to meet specific needs. Options include the following:

- *Expiration Date*  
This option allows administrators to choose the final day that people are able to take the survey. After the expiration date, survey takers can no longer access the survey, but administrators can view the reports.
- *Multiple Pages*  
It can be beneficial to break a survey into multiple pages. This option allows administrators to create several pages and individually add questions to each.
- *Form Field Options*  
A variety of form field options are available including text areas, radio buttons, labels, checkboxes, dropdown menus and lists. Administrators choose the most appropriate field for the question being asked.
- *Data Report Options*  
The information gathered from the survey can be displayed in several different ways, including lists for text answers and graphs where appropriate. Numerical data can be parsed to determine the sum, minimum, maximum and average.

After the survey has been created and published, it becomes available to survey takers through the form generation tool.

**How to use this page**  
 On this page you can design page for form. In order to add question for page , you should think about an answer of question  
**DROP DOWN, TEXT, LABEL , CHECKBOX , MULTILIST , TEXT AREA and RADIO BUT TON** types and then click. If you need more information  
 about question types, you can mouse over on which field you interested in. It will open new small window which shows what kind of question you can  
 create.

**Fields**

Drop down   Text field   Label   Checkbox   Multi list   Text area   Radio button

**Form design of page "About student education"**

Action on selected: delete clear all

---

Please return completed form to:

RILEY, KYLE, Chair  
 Department of Math & Computer Science  
 South Dakota School of Mines & Technology  
 501 East st. Joseph Street  
 Rapid City, SD 57701

---

Computer Science degree(s) obtained at SDSMT&T:

---

BS (date)

---

Ms(date)

---

Additional University degrees obtained or in progress:

---

Are you currently employed full-time?  
 No    Part time    Full time

---

Total years of work experience in computer-related fields:

---

If you are currently employed in the computer field, check off the items that most closely describe the primary focus of the company/entity you work for:

Aerospace \_\_\_\_\_

Computer Sales and Marketing \_\_\_\_\_

Figure 2: Creating a New Page



#### How to use this page

On this page, you can add and edit TEXT field question. During creating TEXT question, you can configure whether or not this field will show on the report and how to display on the report by listing, calculating MAX, MIN, AVERAGE, SUMMATION and COUNT.

If the answer of question is only number, you can select **MAX, MIN, AVERAGE, SUMMATION and COUNT** options.

If the answer of question is only text, you can select **display all answers as list**.

Adding text field to page "About student education"

Title \*

Field required for filling form

Field required

Text field

Valid E-mail address

Digits and decimal point

Want to show on the report

Display on the report required

display by AVERAGE

display by COUNT

display by SUM

display by MAXIMUM

display by MINIMUM

display all answers as a list

SDSMT

Figure 3: Adding A New Question

### 3 The Form Generation Tool

The form generation tool uses the information saved in the database during the survey creation process to generate survey forms. Survey takers visit a web page to answer questions. Required answers must be filled out before the survey can be submitted. After submitting a form, the data is tested for validity. When completed, the survey a "Thank You" page is displayed if the survey administrator has so specified, and the data will be saved in the database.



## About student education

Please return completed form to:

RILEY, KYLE, Chair  
Department of Math & Computer Science  
South Dakota School of Mines & Technology  
501 East st. Joseph Street  
Rapid City, SD 57701

Computer Science degree(s) obtained at SDSMT&T:

**BS (date)**

**Ms(date)**

**Additional University degrees obtained or in progress:**

**Are you currently employed full-time?**

No  Part time  Full time

**Total years of work experience in computer-related fields:**

**If you are currently employed in the computer field, check off the items that most closely describe the primary focus of the company/entity you work for:**

- Aerospace
- Computer Sales and Marketing
- Computer Service (installation and maintenance)
- Computer Hardware Manufacturing
- Consulting
- Defense
- Education
- Engineering other than Aerospace
- Finance
- Government
- Management
- Medical
- Software Engineering
- Telecommunications
- Other



Next

Figure 4: Completed Survey

## 4 The Data Report Tool

The information gathered from the survey takers is organized according to the administrator's options to create data reports. The data is displayed based on the requests specified during survey creation, such as graphs, summations, minimums, maximums, or averages of the numerical data.

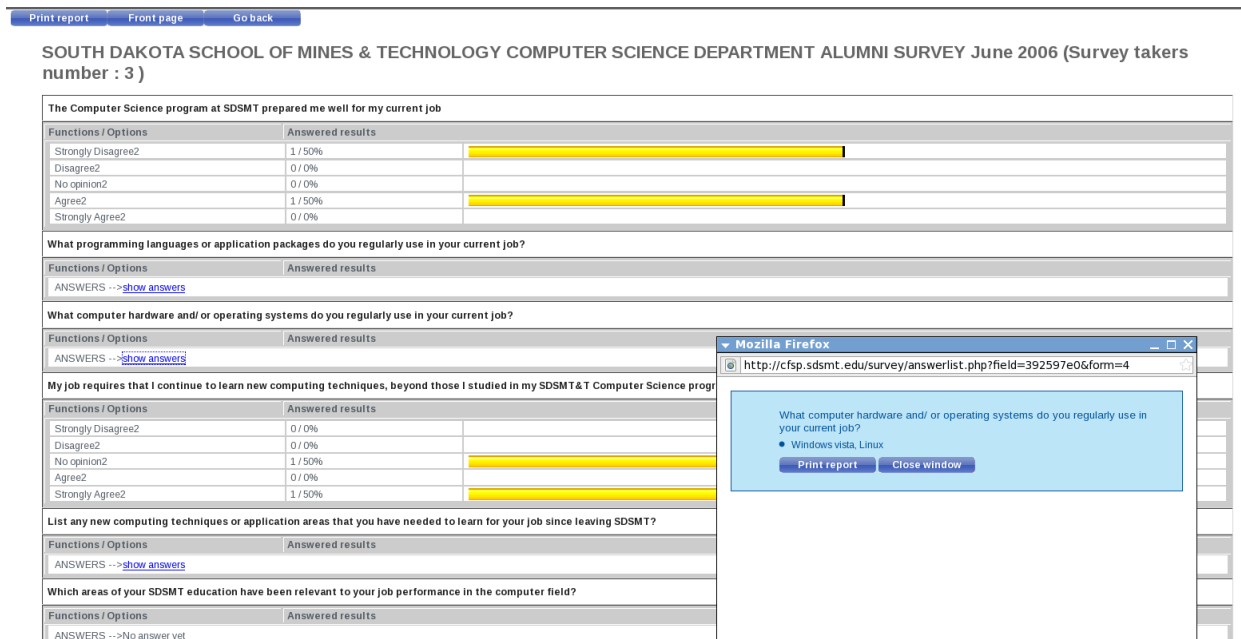


Figure 5: Survey Report

## 5 Future Work

Many improvements are planned for the survey tool in the future. A user management system must be implemented. This will allow administrators to keep track of who has taken which survey and to send automated emails alerting users when new surveys are available. The data reporting tool will have additional options to filter responses so that people can view a subset of information at a time. Additionally, options to share reports securely online or export them as a PDF or spreadsheet are planned. Administrators will also have the option to customize the look and feel of their surveys using individualized templates and custom logos.

## 6 Conclusion

Generalized survey tools can automate the process of collecting and organizing information for a variety of different purposes. Compared to print and mailed surveys, gathering the information electronically saves considerable money and time. Report generation is much easier using data saved in the database than data organized by hand. Collecting surveys in this manner is also much more convenient for the one being surveyed, since the survey can be filled out online and there is no need to mail it in.



## References

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