

Using the SAS® System in An Integrated Survey Application

Paul Pope, Texas Agricultural Extension Service, Texas A&M University System

ABSTRACT

This paper describes how the SAS System's file format conversion tools were exploited to create an application that integrates various software to analyze, query, and present survey data.

INTRODUCTION

The SAS System (for pcs) incorporates an array of file format conversion tools, including PROC CIMPORT, PROC CPORT, PROC DBF, PROC DIF, the data step (FILE, INFILE, etc.), and now SAS/ACCESS software. These tools allow data to be ported to/from the SAS System and other common software applications such as spreadsheets, word processors, and data base management systems.

The application described in this paper demonstrates the utility of the SAS System's file format conversion tools. Specifically, these tools were exploited to integrate the SAS System with other software to meet the diverse data needs of a survey project.

THE PROJECT

Recently, the Texas Agricultural Extension Service (TAEX) participated in a project with the overall objective of providing interested state agencies and child care providers with information on training and resource materials related to child care. Data were collected with a self-administered questionnaire on various aspects of the materials including target audience(s), curriculum content, delivery method(s), cost and ordering information, and special needs.

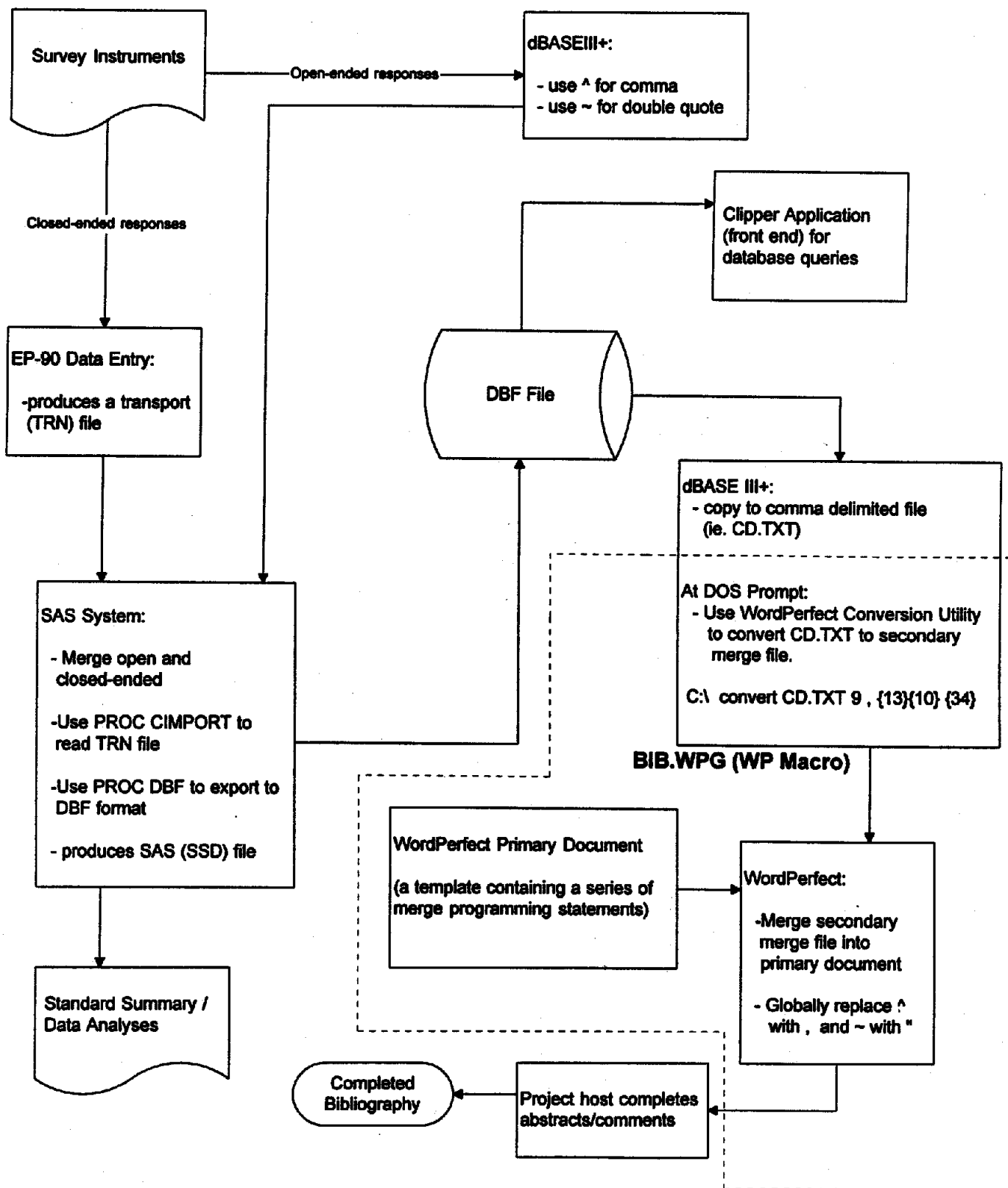
To meet the overall objective of the project, three data needs were identified by the project sponsors. First, responses to closed-ended and short open-ended questions had to be presented in annotated bibliography form. Second, an easy-to-use query builder was required to address inquiries. Third, statistics were required to describe and summarize the data from the survey sample.

THE APPLICATION

An application that integrated five software packages (SAS System, dBASE III+, Entry Point-90 [EP-90], CA-Clipper, and WordPerfect) was developed to satisfy the three data needs of the project. The SAS System's file format conversion tools made integration possible, particularly PROC CIMPORT and PROC DBF. Table 1 provides an overview of the application. Description of the application is broken down into three phases.

TABLE 1.

APPLICATION OVERVIEW
Training and Resource Materials Review
for Child Care Providers



Phase I

In Phase I, survey instruments were precoded with identification numbers and category codes for responses to short open-ended questions (ie. Other _____) and then entered using EP-90. EP-90 is a data entry package that provides double entry verification. EP-90 produced a transport (TRN) file that is readable by the SAS System via PROC CIMPORT.

Responses to longer open-ended questions (e.g. program title, authors, additional comments, etc.) were entered into a DBF file format using dBASE III+. Substitute characters (^ and ~) were used for (, and ") respectively to avoid conflicts with the comma delimited format used in Phase 3. Typically, at TAEX responses to longer open-ended questions are entered last and into a separate file in order to expedite the analyses of responses to closed-ended questions.

Phase II

In Phase II, the SAS System's file format conversion tools were utilized to create a SAS data set. PROC CIMPORT was used to import the TRN file produced by EP-90. PROC DBF was used to import the DBF file produced by dBASE III+. A final SAS data set was created by merging the two imported files by the survey identification number as follows:

```
PROC CIMPORT DATA=CLOSED INFILE ="EP90.TRN";  
PROC SORT; BY SNUMBER;
```

```
PROC DBF DB3=OPENFILE OUT=OPEN_END;  
PROC SORT; BY SNUMBER;
```

```
DATA MERGED;  
  MERGE CLOSED(IN=A) OPEN_END;  
  BY SNUMBER;  
  IF A;  
RUN;
```

Satisfying one the data needs of the project, descriptive statistics (frequencies, crosstabulations, summaries, etc.) were calculated on the survey sample. Finally, PROC DBF was utilized again; this time to export the merged data set back to a DBF file as a prerequisite for satisfying the other two data needs of the project, as follows:

```
FILENAME FINAL 'C:\BIB\FINAL.DBF';  
PROC DBF DB3=FINAL DATA=MERGED; RUN;
```

Phase III

In Phase III, the DBF file produced by PROC DBF was utilized to meet the other two data needs of the project. First, a user friendly query builder was developed using CA-Clipper. Using the DBF file, the query builder extracts any resource materials meeting the stated criteria. For example, the project sponsors could immediately answer inquiries such as "what resource materials are available on video that provide training on nutrition and offer continuing education credits upon completion of the training?".

Second, data from the DBF file were exported to a comma delimited file format as an initial step in creating an annotated bibliography. A WordPerfect macro was written to transform the comma

delimited file to a formatted WordPerfect document of almost 200 pages. Refer to Table 1 for steps contained in the macro.

Finally, to complete the bibliography, the project sponsors simply added abstracts and comments for each set of training materials. The final product was a compact listing of information for each set of training materials that mirrored responses marked on the survey instrument (see sample).

CONCLUSION

The SAS System, with its file format conversion tools, provides considerable data portability. The application presented in this paper is an illustration of the tools' utility in meeting the data needs of a survey project.

SAS and SAS/ACCESS is a registered trademark or trademark of SAS Institute Inc. in the USA and other countries. ® indicates USA registration.

All other product names referenced in this paper are trademarks of their respective companies.

The author encourages you to share your experiences, evaluations, or comments concerning the concepts and applications presented in this paper:

Paul Pope
Texas Agricultural Extension Service
105 Special Services Bldg.
College Station, TX 77843-2468
Phone: (409) 845-3929
Internet: p-pope@tamu.edu

A Trainer's Guide to Home Child Care

Library Reference Number: B10001

Author/s: Kay B. Ringer, Laura J. Cook

Abstract: This is a comprehensive set of materials designed for new child care programs.

Resource Information

Target Audiences:	☐ Early Educators ☒ Family Providers ☐ Program Directors	☐ Child Care Teachers ☒ Aides/Assistants ☒ Trainers Faculty	☒ R&R Staff ☒ College Faculty ☐ Other _____
Materials Included in Curriculum:	☒ Adult Objectives ☐ Children Objectives ☐ Experiential Lessons ☐ Discussion Notes ☒ Lesson Plans	☒ Evaluation Process ☒ Books ☐ Videos ☐ Cassette Tapes ☐ Films	☐ Periodicals ☐ Phonograph Records ☐ Read/Sing Alongs ☐ Other _____
Curriculum Development:	☒ I/We Developed	☐ Non-Commercial Source	☐ Commercial Source
Author Background:	☐ Associate Degree ☐ Bachelors Degree ☒ Masters Degree ☐ Doctoral Degree ☐ Other _____	☐ Child Development ☐ Elementary ☐ Adult Education ☐ Psychology ☐ Medical	☒ Other _____
Type of Training:	☒ Separate Units ☐ Sequential Units ☐ Self Evaluation ☒ Other Evaluation	☒ Trainer Initiated ☒ Self-Study ☒ Small Group ☒ Large Group	☒ On-Site Use ☐ Other _____

Timeframe:	☐ 1-5 Hours ☐ 5-10 Hours ☐ 10-15 Hours ☐ 15-20 Hours	☐ 20-25 Hours ☐ 25-30 Hours ☐ 30-35 Hours ☐ 35-40 Hours	☒ One Semester ☐ Other _____
Available Credit:	☐ None ☐ CEUs	☐ Clock Hours ☐ College Credit	☒ Other _____
Equipment Needed for Training:	☐ Tape Recorder ☐ VCR ☐ Overhead Projector ☐ 8mm Movie Projector	☐ Flannelboard ☐ Blackboard ☐ Slide Projector ☐ Paper, Pencils	☐ Flip Chart ☐ Other _____
Categories Covered:	☒ Healty/Safety ☒ Nutrition/Meal Time ☒ Observation Skills ☒ Parent/Provider Skill ☒ Guidance/Discipline ☒ Indoor/Outdoor Play	☒ Curriculum Planning ☒ Developmentally Set ☐ Business Mgmt. ☒ Special Needs ☒ Professional Growth ☒ Teaching Strategy	☒ Early Childhood Prog. ☒ Managment ☐ Multicultural ☐ Risk Managment ☐ Gender Neutral ☐ Other _____
Needs of Chidren Covered:	☐ Cultural Identity ☐ English Limitation ☐ Physical Handicap ☐ Mental Handicap	☐ Dysfunctional Home ☐ Physical Abuse ☐ Sexual Abuse ☐ Homeless Children	☐ Attention Deficit ☐ Learning Disabilities ☐ Higher Intellect ☐ Other _____

Comments: According to the developer, this program has been reviewed by DACH NOTES.

According to an advisory commitee reviewing the program, the material addresses startup and administration of parent-run programs in the home and meets the business and administrative needs of the audience. The methodology includes written materials and computer software.

Ordering Information

Name: Home Care Strategies, Inc.
 Address: P.O. Box Z2243
 Miami, Florida 21015
 Phone number: (999) 444-3852
 Cost: \$23.95 plus S&H
 Limitations: copyright, photocopy, other