An introduction to SAS is taught as part of the sophomore level Information Processing course. In the Spring term of 1983 SAS was made available to us. The new SAS Procedures Tabulate, and Calendar made excellent additions to the SAS Procedures taught in the course.

1 - BACKGROUND

The Information Processing course was first offered at SCSU in 1972. It has introductory programming as a prerequisite. The course's objective is to provide students with a practical as well as intellectual survey of the field of information processing. The students study a text with sections on computer technology, programming, systems, and computers in society. It was always felt that students should use as well as read about computers and that their computer exposure should include work with both procedural and problem oriented programming. Interactive BASIC programming with an emphasis on file processing is taught the first half of the term and SAS the second half. Our use of SAS in this course is described in a paper presented at SUOI '83 (1).

Problem oriented programming was included in the course to expose students to the relative ease with which computers could be used to solve significant and meaningful problems. The problem oriented language selected needed to be fairly easy to get started with, have the potential to solve meaningful problems, have graphics capability, a good and inexpensive introductory manual, local academic and industrial users, and a commitment from its authors to maintain and expand it. SAS meets these criterion and in 1978 was selected for use over several competing languages that were available. The SAS Introductory Guide (2) was used as a text and students were taught the use of the Sort, Print, Chart, Plot, Freq, Means, and Corr Procedures. When SAS was made available we were pleased to find a number of new procedures that were suitable for use in the Information Processing course. These features were characterised by the ease of use and interest to undergraduates, and power that had attracted us to SAS in the first place.

3 - SAS82 APPLICATIONS

Procedure Tabulate (3) creates hierarchical tables that can contain descriptive statistics such as mean, standard deviation, and range. Tabulate is a very flexible procedure but is not too hard to get started with. To illustrate its application two examples created by students will be presented. One example shows how Tabulate could be used to present data collected on a geological field trip and the other is from the area of production control.

Geological Example

In January 1984, the Geology department of a nearby college sponsored a field trip to San Salvador, Bahamas to collect different algae types and to compare their environmental growth patterns. One problem investigated was the relationship of calcareous algae growth to wave energy levels. Data collected for this study included site, wave height, and species. Tabulate can be used to produce a table showing the total and average number of specimens collected by site, and within each site by species, and within each species by wave height.

Production Control Example

A product is being produced 5 days a week, in two different factories. Each factory has 3 production lines that make the product. Tabulate can be used to display production statistics such as quantity produced, standard deviation and range for each factory. Within each factory statistics can be broken down by day and by machine.

The Calendar Procedure (4) displays data in one of two calendar formats. Calendars can be created that display events occurring on different days. Student created calendars generally contain events such as examination day, vacations, birthdays and the like. The other calendar format displays sums and means for each day, for selected variables. Calendar could be used with the previously described data to display the number of each species collected each day or each
factories daily production. Calendar is easy to use and the impact of it output dramatic.

3 - CONCLUSION

The Tabulate and Calendar Procedures are welcome additions to SAS. They are easy to use, flexible, and a valuable aid in displaying and organizing data. They are also frankly fun to use. We feel that their inclusion in the SAS Introductory Guide should be seriously considered.

REFERENCES