Greater Interest in Government

⟡ California Psi ⟡

Deconstructing the Computer

The purpose of the Greater Interest in Government Program, established in 1969 by Frederick A. Faville, Illinois Beta '19, is to stimulate interest in civic affairs and public-policy issues among student members of Tau Beta Pi. The Executive Council awards annual grants up to $750 each for these activities from the investment earnings of the Greater Interest in Government Fund.

The Project

BY PROVIDING STUDENTS at a local school with all the necessary hardware, our California Psi Chapter planned to teach them through visual aids, practical applications, and hands-on experience how each component functions and contributes to a computer system. Through multiple sessions about the assembly of a system, much detail would be provided for a wide range of topics. Knowledge of essential hardware components and software applications would be a tool in gaining valuable skills. This would allow students not only to know how to use a computer, but also how the computer works. Because this program is best suited for middle-school and high-school students as an after-school activity, our emphasis would be on having fun while learning a topic of interest.

As computers have become an integral part of everyday life, students need to understand how and why computers work. There is a continuous global advance in technology, and steps need to be taken as a result. The more experiences students have with technology, the more prepared they will be for the future. The lack of availability leaves underrepresented students behind in the areas of math, science, and technology. Unfortunately, most schools do not have enough funds to provide eager students with hands-on experience in computer-hardware components as well as maneuvering through complex software applications. Our project would provide students with as much computer exposure as possible through the assembly of complete computer systems from the ground up.

Supplies were bought using the funds from the Tau Beta Pi Greater Interest in Government Grant. In order to provide enough computer systems for the students, we bought 10 computers in bulk from the UCSD surplus.

Directory of Sessions

MOCK PRESENTATION (2/20/03): In preparing to hold sessions at the school, members who volunteered needed to research the topic chosen and to find a means of presenting their topic in an enjoyable and interesting fashion. A mock presentation was held so members could practice how they would present their topics to the students. Members provided much feedback and suggested interesting ideas, such as decorating computer mice and designing transparency slides during their sessions.

INTRODUCTION MEETING (3/05/03): Members were asked to list all the components of the computers and everything they knew about each. They were also asked to add the components listed into one of seven different weekly topics that they would present. A general idea of how the sessions would be held was given to them along with their as-signed computers to use throughout the project. They were allowed to take apart the computers as long as they could reassemble the components. Interest was piqued as they disassembled components they had never seen before and asked questions about the different parts they studied.

GENERAL PROJECT MEETING (3/13/03): After planning the details with the local school, volunteers met to resolve details before starting sessions. Each topical group chose a date, and directions and times were assigned. Basic questions about the school, numbers of students, and whether the same students would be there every week were answered. Volunteers were also briefed on the logistics of volunteering at the school, and the project was ready to start.

Weekly Sessions

Throughout the actual sessions during April and May, the computers were disassembled. As they explored such topics as types of memory, disk drives, the history of the chip, and basic peripherals, students learned about computer anatomy through drawings and the computers themselves. Our weekly topics included: Motherboard, Memory / Disk Drives, CPU, PCI Devices / Peripherals, Human Interface Devices, and Software and Explanations of how HTML works on the web.

Although most of the young students expected more of a web-based programming session rather than a hardware tutorial, they provided much positive feedback. Their driving motivation was to know how to improve the computers they were using at home, so there was a genuine interest in all topics presented.

Itemized Purchase List

Item	Size / Speed	Brand	Price
CPU	350 megahertz	Intel Pentium	$30
RAM	64 megabytes	Various	$10
Hard drive	2.1 gigabytes	Western Digital / Fujitsu	$20
Monitor	15 inches	Dell / ViewSonic / Generic	$10
Mouse & keyboard	Standard 101/102 key	Various	$5
		Total/computer:	$75
		Total for 10 Computers:	$750*

* Total price listed does not include tax