

A MASTER'S DEGREE COURSE OF STUDY DATABASE

by

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CHAPTER I

INTRODUCTION

1.1 History

There has been an ongoing effort in this University to automate certain student records. The college of Home Economics has developed a program which will verify what Bachelor's degree course requirements are being met by their major students. This program helps faculty members advise students in planning course loads for future semesters. This program was implemented using PL/1, with no provisions made for any sort of database management system (DBMS). [4]

Although several Home Economics departments at other institutions have expressed interest in duplicating this implementation, it suffers from being used in the batch mode only. Additionally, this program does not lend itself easily to modification, and given frequent curricula changes at both the departmental and College levels, this is a serious complaint.

Voelz and Garland [8] designed a prototype system using a DBMS that would contain University-wide academic records. This implementation utilized the Integrated Data Base Management System (IDMS) [2], and was an adequate starting point. The commitment to a DBMS was important because the data can be described, stored, and manipulated independently of different users. Voelz and Garland's

design proved to be too large, expensive, and wide ranging for any Computer Science Department applications.

In 1976, Long [4] constructed an IDMS database that extended upon the concepts of Voelz and Garland's scheme. Long was commissioned to make an economical system which would act as a counselling aid for the Computer Science faculty. Other requirements to be met by this database included Bachelor of Science requirements, major course requirements in Computer Science, some personal information on the student, and courses completed and/or currently enrolled in. This program also used the batch mode on an IBM 370 mainframe.

1.2 Preliminary Guidelines

The evolution of computer programs that automate both academic record keeping and student advising procedures continues. During discussions last Fall, the need was expressed for a prototype system which would go beyond the efforts mentioned above. The major constraints upon this system were:

1. the system must be available to interactive display terminal users
2. the DBMS must provide independence and security
3. the system would advise and help Master's students in Computer Science
4. the prototype must be cost effective

These constraints necessitated using the Department's Interdata 8/32 minicomputer, and a conversational DBMS system INFO32 [3] , as the hardware and software support, respectively, for this project. The choice of the 8/32 reflected the cost constraint, as the overall database would be cheaper to operate on this machine compared with an implementation on the Kansas State Computing Center's Itel AS-5. The smaller machine had the added benefits of terminal display mode, and convenient access for Computer Science students.

Other reasons for choosing the Interdata mini were that the Department would like to encourage the use of the 8/32 by out of town users via telephone links. Furthermore, the Department has a continuing research interest in database applications for minicomputers over distributed networks.

INFO32 is a software product of Henco, Inc. [3]. Primarily a business oriented system, INFO32 uses English keywords as language command instructions for data entry and update, query formulation, and report writing. INFO32 was selected as the DBMS because it works well in a terminal display environment, was available on the 8/32, and lent itself easily to a frontend interface [5] . This interface will provide much of the data security and independence, as it masks the user from the actual INFO32 database. It will be discussed at a later time in this report.