

EXAM GENERATION SYSTEM

by

KOKA RAVINDRA

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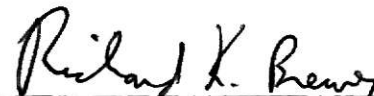
Department of Computer Science

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CHAPTER 1

INTRODUCTION AND PROBLEM DEFINITION

Information processing is generally viewed as the manipulation and organization of information in a purposeful way. The advent of computers and their unique capability to store and manipulate vast quantities of information has enabled great advancements in the development of information processing systems. Most organizations, whether scientific or business, are faced with the problem of an information explosion and the computer is a very effective tool to help overcome this problem so that more time may be spent on meaningful and constructive work rather than on the tedious and irritating job of retrieving necessary information each time it is needed. Numerous information processing systems covering a wide range of areas such as the military, business, industry, medicine and education have been successfully developed and implemented. The basic objective underlying all these systems is to access the relevant information in as short a period as possible and to present it to the user in the form he desires.

It was with this objective in mind that the Exam Generation System was developed, and it is hoped that it would assist faculty or anyone associated with the teaching profession in constructing exams for their courses. This system will enable a user to create a database of questions and answers for a particular course, and to obtain a formatted printout of the questions by merely specifying the numbers of the questions he wishes to appear in an exam. The formatted exam will have answer space allotted for

each question and this allocation is controlled by the user. An output with the solutions for the questions is also provided for the user's reference.

There might be criticism from certain quarters about such a system as it could standardize the contents of the exams being generated. To counter this, updating of the database has been made very convenient and the user can make changes whenever he wishes to. This should hopefully lead to a dynamic and healthy system.

The factors governing the design of the system are listed below:

- 1) It is general purpose in the type of data to be accommodated with a restriction on the record size (which could be modified by the user).
- 2) It enables the user to create a database on an auxiliary unit of his choice by supplying the data in the prescribed format.
- 3) It enables the user to add or delete data entries to the database.
- 4) It enables the user to obtain three types of printout.
 - (i) A printout of the masterfile.
 - (ii) A printout of the exam consisting of the questions retrieved on his request.
 - (iii) A printout of the exam along with the solutions to the questions.
- 5) It operates in a batch environment.

SYSTEM ENVIRONMENT

The system uses the IBM 360/50 at the Computing Center, Kansas State University, with peripheral units such as disk, tape, card reader and line printer. The system is written in PL/1, and the database is a direct access, regional (3) file with undefined length records.

CHAPTER 2

SYSTEM DESCRIPTION

2.1 Introduction

The Exam Generation System is split up into three programs:

- (i) Program QACREAT - To create the database
- (ii) Program QAUPDAT - To update the database
- (iii) Program QAPRINT - To retrieve and print the questions specified for the exam.

These programs are invoked by the cataloged procedures QUIZGENC, QUIZENU and QUIZGENP.

Program QACREAT accepts character data from cards and processes it in accordance with the format code before storing it in the database. The database is initially created on disk and then moved to tape.

Program QAUPDAT updates the database, i.e. adds or deletes data entries. While adding, the data is to be processed in the same way as while creating the database. The question numbers identifying the records to be deleted are read in from cards and the source keys generated. The database is moved to disk updated and then moved back to tape.

Program QAPRINT retrieves questions identified by the question numbers which the user specifies. It then formats them and prints out the examination and the examination with solutions. A printout of the masterfile is also provided if the MASTFIL option is turned on.

The outline of the system is shown in the next section.