Charter III

The University Entrance Examination System

Overview of the System

The University Entrance Examination application system is arranged every year between March and May.The system is held by the Ministry of University Afairs.It consists of four main procedures :

- Student records getting procedure.
- Examination rooms preparing procedure.
- Examination seat numbers validating procedure.
- Students selecting procedure.

Figure 3.1 shows steps of the overall system.

The University Entrance Examination application system is implemented on various types of computer hardwares. In 1994, the system was, implemented into IBM RISC/6000 computer for enrollment procedure. Other main procedures, the SUN SPARC 10 work station was used.
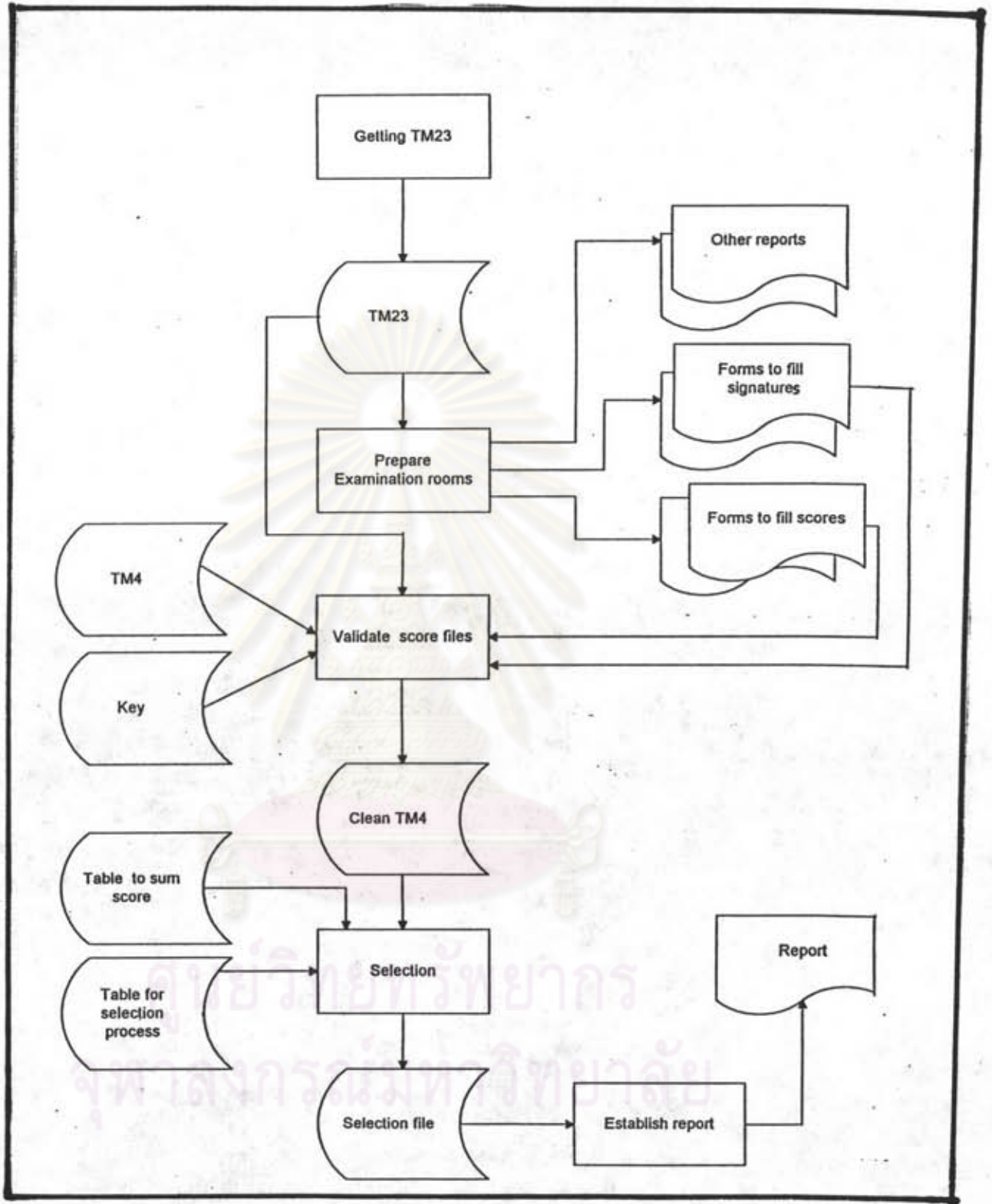
Figure 3.1 Over View of the System.

Student Records Getting Procedure

There are two ways to get the student records :

- Get from the enrollment system that was held at Chulalongkorn university on 4-13 May, 1994.

- Get from the disketts from other universities.

Finally, the two types of data, called TM13, must be converted into TM23 files. The TM23 files are combined into one unique file, also called TM23, for next processing step. The system flow of the procedure to get the student records is shown in figure 3.2

1. The Enrollment System for the Applicants at Chulalongkorn University

The enrollment system was held between 4th March and 13th March. The system was implemented using Client-Server concept.The server was IBM RISC/6000 and there were 30 micro computers connected to the server. There were also 30 printers attached to clients. The server and clients were connected to network using Token Ring topology. Figure 3.3 shows the logical view of the system connection.
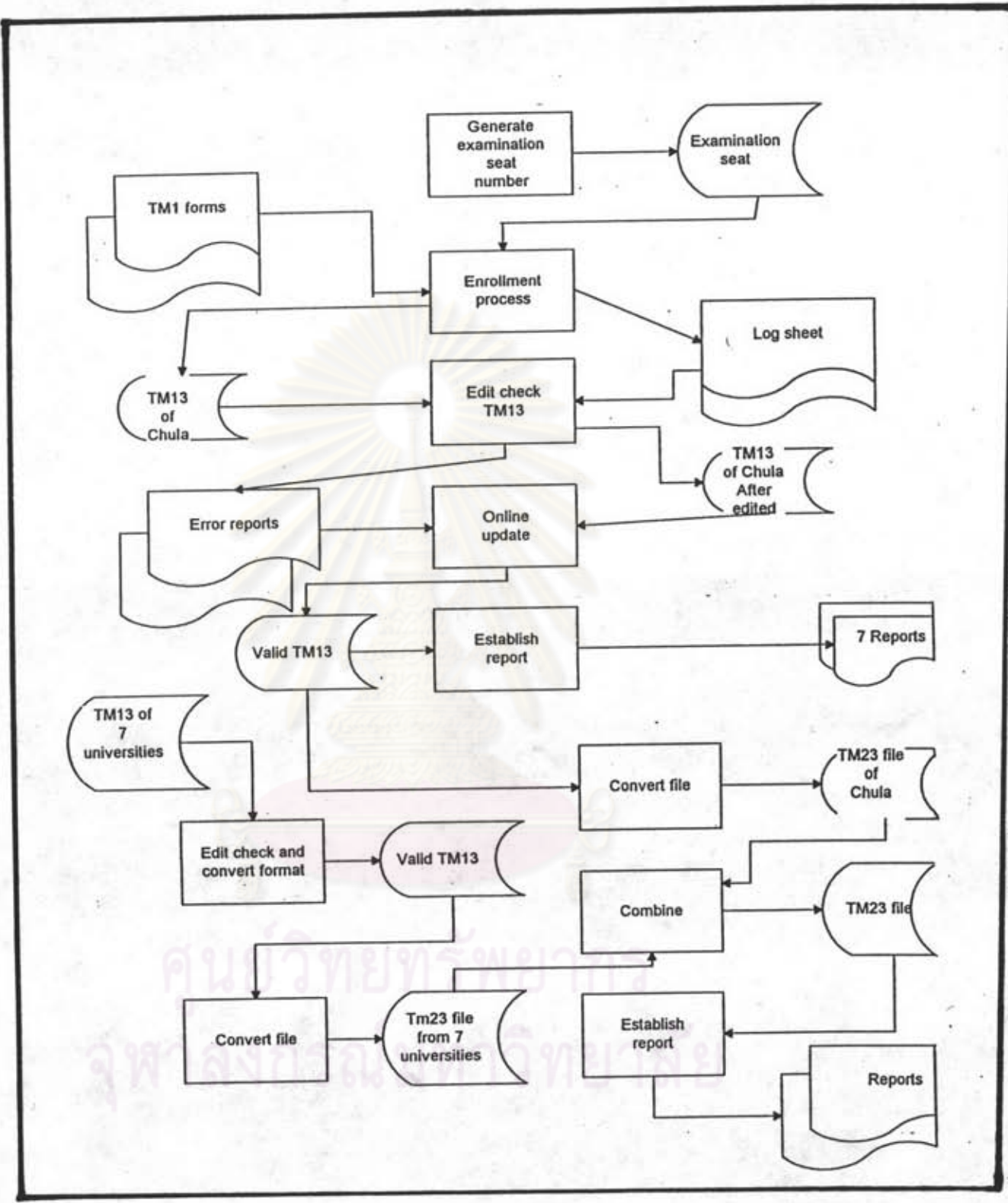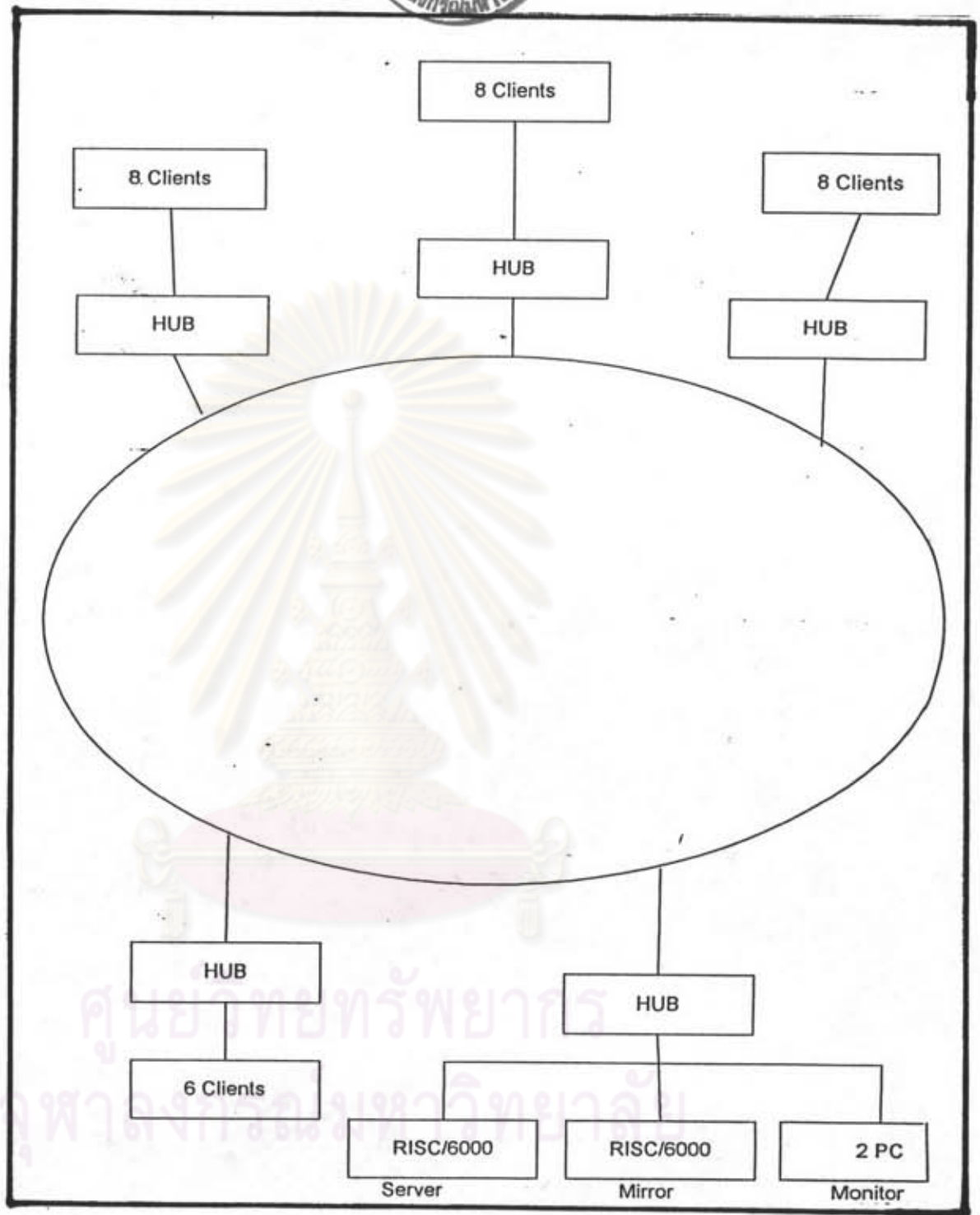
Figure 3.2 TM23 File Getting Procedure .

Figure 3.3 Logical view of Client-Server system.

There were 5 Token Ring hups, each hup supported 8 ports. Another IBM RISC/6000 computer was served for backing up data and system monitoring.

Examination seat numbers were generated randomly before the enrollment took place. The numbers were copied into IBM RISC/6000 server. The server would assign one of these numbers to each student record. The input data of the system were the forms called TM1 which kept the student details that would be recorded into clients and then they would be transfered to the IBM RISC/6000 server. Another IBM RISC/6000 was set up to store data copied from the server. The key-in officers recorded the student details into microcomputer, clients, from these TM1 forms. After that the server assigned a unique seat number to this student record. The clients, next, sent this data to server. The student records were kept in file called TM13.

Every day, TM13 files were checked and verified by the officers to clear invalid records. Seven types of report were printed twice a day. The data in IBM RISC/6000 server was copied to a tape storage and seat numbers were updated every evening.

2. Getting TM13 File from Other Universities

There were 7 universities sent enrollment data, TM13 file, to Chulalongkorn university. They all created the enrollment system by themselve. TM13 file would be edited and verified carefully. Then this TM13 files were combined to the TM13 files collected at Chulalongkorn university. All TM13 files were combined into one unique TM13 file. It would be converted into another format, called TM23.

Examination Rooms Preparing Procedure

After TM23 file had been created, it was copied and splitted into small files. Each file contained student records that would take the examination at the same place. Small TM23 files were the input of the examination rooms preparing procedure . The system flow of this procedure is in figure 3.4 Input tables of the system were examination rooms table and examination time tables. Control file specified the group of students and subjects.

The important reports that the system should create were :

- Report to show the places of the examination rooms.
- The list of the students that will take the examination.
- Forms to fill the student signatures.
- Letters to tell the students about their place to take the examination.
- Stickers that are sticked on each examination desk.
- Report to show location of the examination rooms and examination

unit.

- Forms to fill scores of each subject scoring manually.

Forms to fill the students signatures, however, would be an input to the examination seat numbers validating procedure . The forms could identify all students who did not come to take the examination.

Examination Seat Numbers Validating Procedure

After the students took the examination ,their answer sheets, most subjects, would be read by OMR readers. Data would be kept in diskettes, called TM4. The rest of the scores that were gotten from the forms that the officers filled them were key-in by the officers, also called TM4. The system flow show in figure 3.5.

Each record in TM4 files were marked a sequence number for data validating process. The forms that the students signed their signatures when they took the examination were kept to detect the absent students. Infact, for every subjects, the total records of the absent students plus the total records in TM4 file are equal to the total records that are in TM23 file.

After the records of TM4 files had been validated, the seat numbers updating process were required to make the TM4 files that contained the student scores valid.
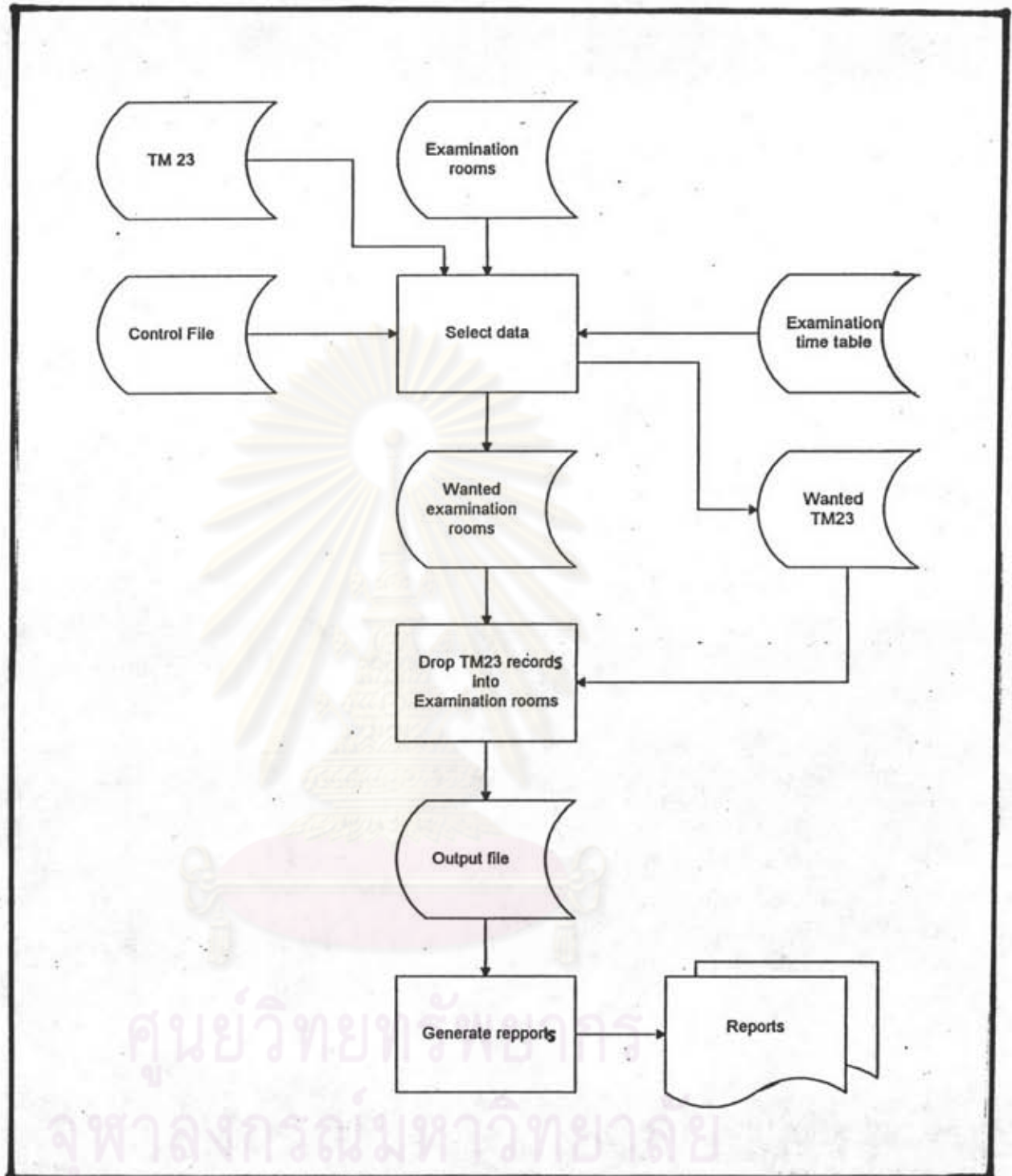
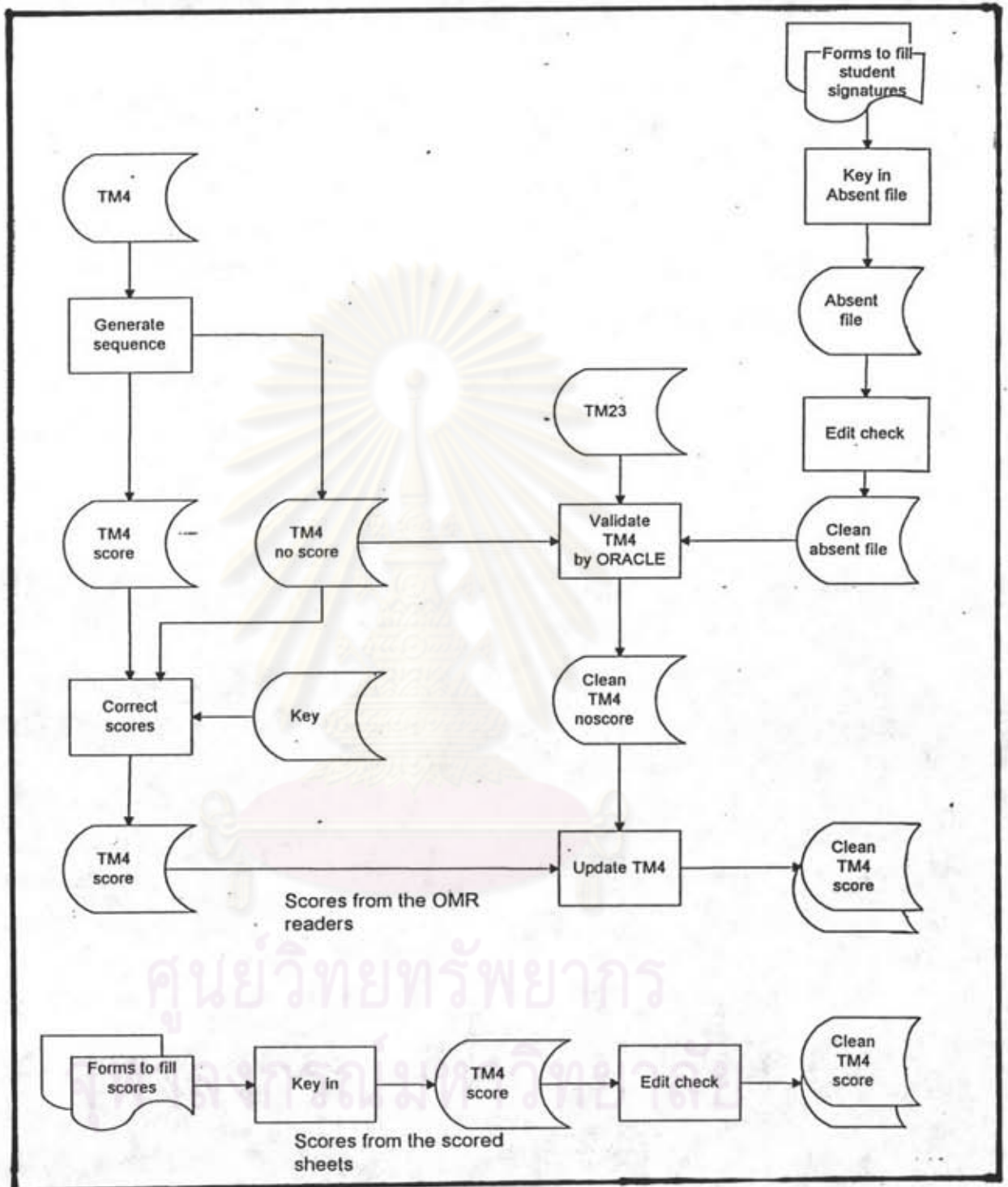Figure 3.4 Examination Rooms Preparing Procedure.

Figure 3.5 Examination Seat Numbers Valdating Procedure.

Students Selecting Procedure

Every subject, the student scores from valid TM4 files were recorded into TM23 file. The following steps to select the students for each faculty are shown in figure 3.6.

First, records in TM23 file that contained the student scores were summarized into file called TM23SUM.DAT. It contained the total score of each student records. Summation process needed one table file that recorded a group of subject that each faculty required.

Second, the records in file TM23SUM.DAT were splitted into small records. Each records contained only one choice of faculty that a student selected. If one student selected three faculties, his record would be splitted into three small records. The output file was called TM23SPT.DAT. The records of this file were sorted. The primary key was the order of faculty choice. The secondary key was the score. The sorted file was called TM23SPT.SORT.

Finally, TM23SPT.SORT was an input file for the selection process. The process required a selection table. The table recorded the amount of student that each faculty required.
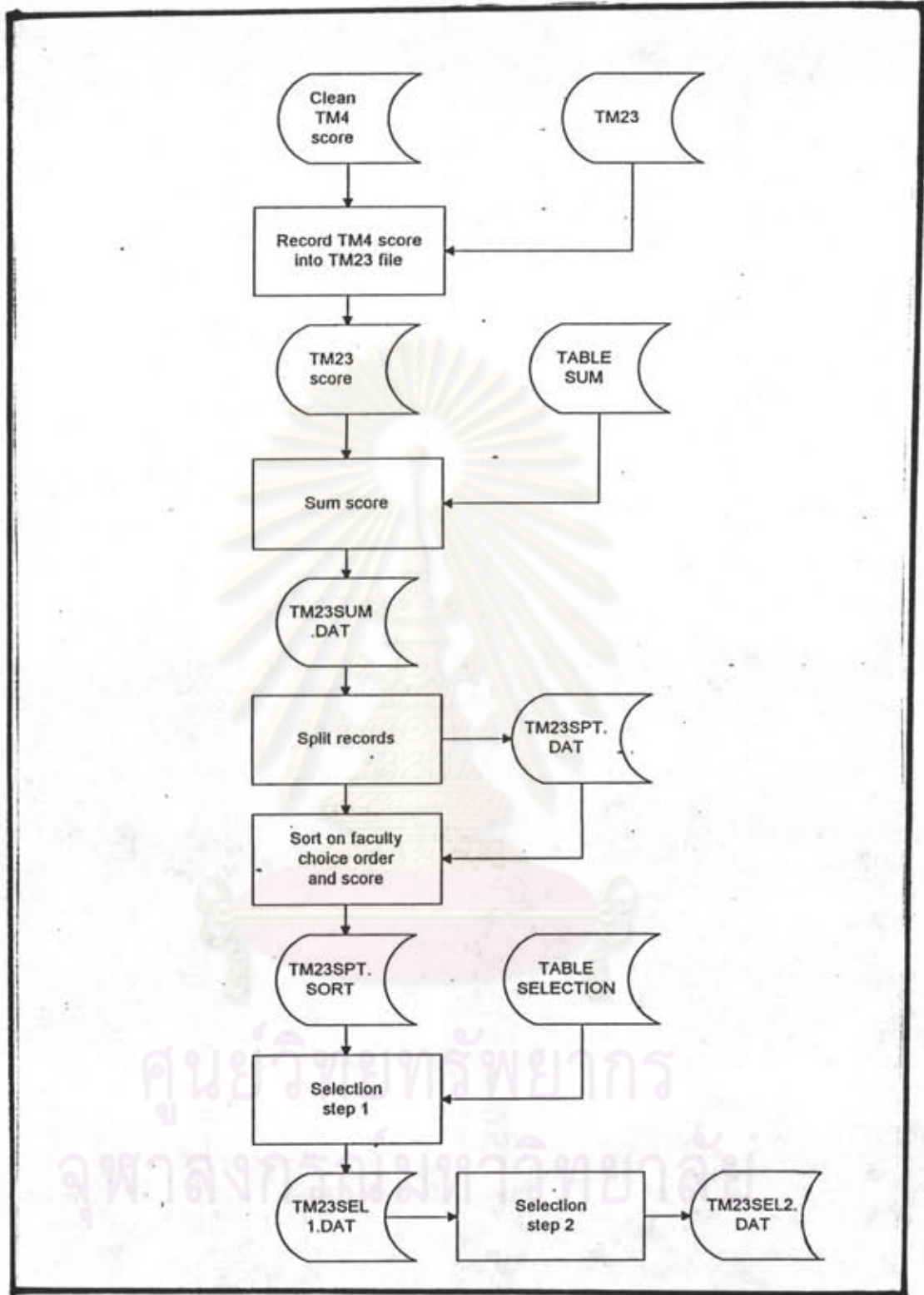
Figure 3.6 Students Selecting Procedure .