
Habibollah Haron, Mohd Yunus Majid, Faridah Maarof, Noriah Idris
Faculty of Computer Science and Information System,
University Technology of Malaysia, 54100 Kuala Lumpur, MALAYSIA

Abstract

The development of information system has been given much attention lately. Realising this phenomena, the need to develop an analysis system seems appropriate - as this system would efficiently assists decision makers in solving certain pertinent issues. This paper discusses the development of such system based on pre existing information system. SAS procedures like SAS Base, FSP, AF, STAT, ETS and GRAPH are used. The case study chosen for the development of this system is one of the largest and most active social organisation in Malaysia and the software used by this organisation to keep important information is dBaseIV. Thus the development of this system includes two phases namely the linking of dBaseIV and SAS and the development of an analysis system.

Keywords: Information System, Analysis System, System Development, procedure, SAS and dBaseIV

Introduction

Jemaah Islah Malaysia (JIM) was formed officially on 27th of July 1990 with Islam as the underlying principle and "With Islam we develop the Society" as the motto. The objectives of JIM are as follows:

1. To propagate the noble aspiration of Islam and to implement dakwah activities to every strata of society.
2. To unify human resources towards developing a progressive and dynamic society in every aspect of life.
3. To propagate the concept of unity base on the principle of brotherhood and universal human values and to achieve the objectives as required by Al Quran and Sunnah Ar Rasul (p.b.u.h.) without transgressing regulations and laws as stipulated by local Islamic authority at federal or state level.

Objective and scope

The objective of this project is to develop an Analysis System for Jemaah Islah Malaysia and later expand and standardize the system for use to other social bodies. The scope of this paper covers the organizational structures, members, activities and financial aspects of Jemaah Islah Malaysia in the development of the Information and Analysis System.

Information System

Currently, the existing database consist of memberships organisation, activities and financial aspects. The entering and maintenance of these data is done using dBase IV. DBase IV is being chosen as the database management system in the development of the system in this project due to its widely usage and popularity among organizations in Malaysia and furthermore of SAS capability to import dBase files. Hence, this point promise the capability of attracting wide number of social organizations to benefit from this system. The objective of this project is to develop an Information and Analysis System for Jemaah Islah Malaysia and later expand and standardize the system for use to other social bodies. The scope of this paper covers the organizational structures, members, activities and financial aspects of Jemaah Islah Malaysia in the development of the Information and Analysis System.
3.1 Components of the System
As a database management system, storage, updating and retrieval of data which are kept in the database is one of the basic functions of dBase IV. Hence components of the system that are related to the above functions is being implemented using dBase IV.

3.2 Storage of Data
To achieve a system that is beneficial to the executives of JIM, a study had been done with respect to user requirements. Interviews, discussions, contacts and collections of input forms such as membership application form and any literature of JIM which can help in the data specification were carried out.

3.3 Database Design
The information system concentrates on the members, activities, organizational structures and financial. The database tables involved are Personal, Address, Education, Children, Wives, Activity, Job_History, Committee, Holder, Income, Actual_Expenditure, Expectation_Expenditure, State, District, Job, and Area_of_Qualification.

3.4 Updating of Data
This part of the system consists of appending, editing and deleting of data in the database. Friendly user interface with two dimensional menu and help facility are catered in the system. Appending of members data involved generation of membership number based on the concatenation of district code and last serial membership number which is incremented by one. Data validation procedures are performed before data is stored in the database so as to attain data integrity. Editing of data involved the choice of table that is to be edited and the input of primary key for example the identity card number for membership database. Again, data that are edited also undergo validation procedures where necessary. Deleting of data also required the entering of specific primary key.

3.5 Retrieval of Data
This part of the overall system retrieved data which does not involved heavy arithmetic operations which are facilitated by SAS. Retrieving of particulars of one or all members, members of certain area of qualifications, place of work, within certain range of salary, certain district or state are catered in this part of the system.

4 Development of Analysis System
The major requirement in developing system analysis is the ability of accessing data which are kept in the database (dbf) files generated by the dBase IV. The SAS ability, i.e. SAS AF, to fulfill the requirement enable us to continue the system development although exist some limitations in doing so. There are four main modules in the analysis system i.e. membership modules, JIM activity, organizational structure and financial. The development of the system analysis used SAS/AF with Screen Control Language (SCL) and macro function. The ability of SAS/AF and SCL in accessing and displaying data, and its flexibility in programming provide the possibility of advanced analysis system. Using of SAS/AF and SCL in system analysis development, we need to include menu and program. Figure 3 shows the level of program and menu as created in the JIM analysis system BUILD: DIRECTORY so far. Table 1 shows the JIM system analysis directory as appeared in the SAS system.

4.1 Membership module
Membership modules allows user to access information of member and analysis of membership. Currently, only membership number will be accepted as the key to access the information. After user enter the membership number, verification will be done to check whether the membership exist in the database. This job will be done by PROG1. If the membership exist, PROG2 will interact with PROG1 using macro variable to pass the member information to be displayed. Program displayed in Figure 5 is the program PROG1 to accept and verify the membership number. Program displayed in Figure 7 is the program PROG2 to display the member personal data if the membership number exist. Here, macro variable are used. Refer to the Table 2 below that show the variable in PROG1, PROG2, and macro table that used to display personal data.
Figure 3  SAS menu & program involved in Analysis System
4.2 Activity modules
Likewise membership module, activity module consists of two options i.e. activity information and activity analysis. Activity information is accessed using date of activity. Currently there are four types of analysis provided by the activity menu. The options are pie chart, histogram chart, bar chart and frequency table. The program is used to generate output for pie chart, histogram, bar chart and frequency table. Refer to line 12 & 13 in PROG10.PROGRAM that call the SAS procedure. Figure 9 below shows the result of the program PROG10. The bar chart is generated by the chart.
procedure instead of gchart supplied by SAS/GRAPH. In actual system, the SAS/GRAPH procedures are used to display the result of the analysis.

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4.3 **Financial Modules**

This module is designed for:

(i) analysing, estimating and planning for all activity related to financial.

(ii) forecasting of income based on the database schema.

(iii) basic statistic analysis and detail on source of income, expenditure and budget of expenditure for the activity done or will be held.

(iv) forecasting of JIM financial status using SAS/ETS. The model used is a linear forecasting model.

4.4 **Organizational Structure**

The module does not analyse data. It accesses and displays information on specified format. The five organisation levels of JIM and can be accessed by the system are central committee, state committee, region committee, woman committee and conference management committee. For each level, information retrieved will be displayed such as Current and past holder, Number of holder allowed for each post, Scope and responsible for each post, Post status, for example appointed atau elected through vote, resignation date and appointment date.

5. **Conclusion**

The development process of the analysis system has covered two modules out of four i.e. membership and activity modules. The financial and organizational structure modules are in the design process. Therefore, this paper will cover only the first two modules. With the development of the analysis system, JIM committees are able to monitor the member status and activity and also the information of the executives in the organization. This will positively contribute to better management, efficiency of administration and better decision making.
init: return;
main: submit continue;
   proc dbf db4=pe out=personal; run;
   endsubmit;
   dsid = open('personal','I');
   if (dsid <= 0) then do; _msg_ = 'Error opening personal';
   return; end;
   else _msg_ = 'Personal has been opened';
   name = 'ICNO';
   vnum = varnum(dsid,name);
   obsno = locatec(dsid,vnum,icno,'U','' );
   if (obsno = 0) the do; _msg_ = 'No customer';
   end; else do;
   _msg_ = 'Customer exist';
   vnum1 = varnum(dsid,'NAMA');
   vnum2 = varnum(dsid,'GJ');
   vnum3 = varnum(dsid,'GAJ');
   vnum4 = varnum(dsid,'BELANJA');
   vnum5 = varnum(dsid,'KODJAN');
   vnum6 = varnum(dsid,'NLAHIR');
   vnum7 = varnum(dsid,'KODBANG');
   nama1 = getvarc(dsid,vnum1);
   icno1 = getvarc(dsid,vnum2);
   gaji1 = getvarc(dsid,vnum3);
   belanja = getvarc(dsid,vnum4);
   jantina = getvarc(dsid,vnum5);
   lahir1 = getvarc(dsid,vnum6);
   kodbl = getvarn(dsid,vnum7);
   call symput('nama _m',nama1);
   call symput('icno _m',icno1);
   call symput('gaji _m',gaji1);
   call symput('belanja _m',belanja);
   call symput('jantina _m',jantina);
   call symput('lahir _m',lahir1);
   call display(prog2.program');
   return;
   end;
end: return; term: return;

Figure 5   Program Name : PROG1

init: return;
main: submit continue;
   proc dbf db4=activity out=activity; run;
   endsubmit; submit continue;
goptions device=ega colors = (red yellow green);
tittle f=swiss c=white 'Percentage of Activity Status';
   proc gchart; hbar status; run; endsubmit; return;
   term: return;

Figure 8   Program Name : PROG10
init: name = symget('nama_m'); nokp = symget('icno_m');
gaji = symgetn(gaji_m); belanja = symgetn(belan_m');
jant = symget('jantina'); nl = symgetn('nelahir');
kb = symgetn('kbangsa');
if (jant = 1) then jantina = 'MALE';
else jantina = 'FEMALE';
select; when (nl=1) nlahir = 'JOHOR';
when (nl=2) nlahir = 'MELAKA'; when (nl=3) nlahir = 'N.SEMBILAN';
when (nl=4) nlahir = 'SELANGOR'; when (nl=5) nlahir = 'PERAK';
when (nl=6) nlahir = 'KEDAH';
otherwise nlahir = 'KELANTAN'; end;
select; when (kb=1) bangsa = 'MALAY';
when (kb=2) bangsa = 'CHINA'; when (kb=3) bangsa = 'INDIA';
otherwise bangsa = 'OTHERS'; end; return;
main: return; term: return;

Figure 7 Program Name: PROG2

FREQUENCY OF KOD_AKT

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Figure 9 Output of PROG10

References

SUGI18 9-12 May 1993