

Hostel Decision Support System

ANALYSIS OF THE PROPOSED SYSTEM

The proposed computer-based system is a Hostel Decision Support System, which is specifically designed for the Welfare Unit of Yaba College of Technology.

Having established what the objectives of the proposed system are, the system was designed so as to achieve these objectives. In designing this system, the system was specified in detail. This involves identification of inputs, files, processing, output, hardware, costs, accuracy, response times and controls.

The proposed system however has the following features;

1. It provides reliable security measures, which protect the data and the package from accidental or deliberate threats that could cause unauthorized modifications, disclosures or destruction of the data and protection of the information system by the use of password.
2. It provides an automated registration of bona-fide students thus, storing information on the system rather than using bulky files.
3. It provides input of data at anytime with the ability to update records in the system.
4. It allows automatic and manual allocation of rooms to bona-fide students while allowing the user to use his/her discretion.
5. It provides efficient and effective means of producing hard copies of information by generating reports on hostels, departmental allocation, special rooms allocation etc
6. It obtains greater speed and accuracy in handling data and generating reports.
7. It gives room for addition of new residential hall(s) so as to make the system effective due to the ever-increasing population of students in the institution.
8. It provides a databank, which serves as a store of all records at the end of each academic session by simply clicking on a RESET button.

3.1

The proposed system uses the procedure below to store, process data for the allocation and generation of reports, which is the output listing of the system.

OUTPUT DESIGN

The output design is the design of the form on which our desired output is displayed; this has to do with the actual interface. It is considered first in designing because it is the targeted output that would determine the input and the method of processing that would ensure the output.

The system provides several reports to answer different queries and these reports are;

1. All allocated rooms
2. All unallocated rooms
3. Fully allocated rooms
4. Partially allocated rooms
5. Allocation by hostel
6. Special rooms allocation
7. Allocation by department
8. Allocation by level
9. Allocation by sex
10. Student information

Importance of generated reports

1. To give a listing of the bona-fide students
2. To list rooms that have been allotted to students and vacant rooms so as to make allocation fast
3. To list rooms that are occupied by special students in case of necessity
4. To give printed copies of departmental allocation which students check to confirm allocation etc

Information displayed on the reports are;
Hostel name, room number, capacity and capacity allocated.

1. INPUT DESIGN

The input form is the input document used to record information. The Student Affairs Unit receives the list of all the students from the MIS and this data serves as the input into the form for students' registration, which is linked, to a database. This form is computer-based and designed using the manual form as a prototype. The system has several input forms, which include;

1. Registration form
2. Create new hostel entry
3. Add room entry/ Add hostel room
4. Hostel management form

Fields used as input data to the system are
Matric number, last name, first name, sex, school, department, level, allocated, course of study, name of sponsor, sponsor address, next of kin, kin address, receipt number, special, cgpa, hostel name, capacity, room number, room capacity.

Samples of the input forms shall be printed here...

1. A printed copy of Regform
2. A printed copy of Addhostel form etc

2. FILE DESIGN

At this stage, the various attributes of the tables that serve as the storehouse for the data that are used for various processing and report generation are defined. The tables are designed in Microsoft Access and are as listed below;

1. Schools

This table stores the various schools in the institution.

Attributes:

Field name	Data type	Description	Size
School	Text	Primary key	50

2. Department

This table stores the name of all the departments in the institution. It gets its data from the form "departments" and is arranged according to their schools.

Attributes:

Field name	Data type	Description	Size
School	Text	Primary key	50
Department	Text	primary key	50

3. Course

This table stores all the course under each department defined in each school in the institution. It gets its data from the form "departments"

Attributes:

Field name	Data type	Description	Size
School	Text	-	50
Department	Text	-	50
Course of study	Text	primary key	50

4. Hostel name

This table keeps track of the names of the existing halls of residence along side their hostel identification name.

Attributes:

Field name	Data type	Description	Size
ID	auto number	-	long integer
Hostel name	Text	primary key	50

Hostel nick name	Text	-	50
Sex	Text	-	50
Prefix	Text	-	50
Capacity	number	-	long integer
Capacity used	number	-	long integer

5. Hostels

This table holds all information on all the existing halls of residence as regards the capacity, rooms allocated etc.

Attributes:

Field name	Data type	Description	Size
ID	auto number	-	long integer
Room id	Text	primary key	50
Hostel name	Text	-	50
Room number	Text	-	50
Capacity	number	-	long integer
Allocated	number	-	long integer
Sex	Text	-	50

6. Room allocation

This table stores the details of the actual allocation of the various rooms in each hall of residence as well as the occupants' matriculation number.

Attributes:

Field name	Data type	Description	Size
ID	auto number	-	long integer
Room id	Text	primary key	50
Matric number	Text	-	50
Hostel nick name	Text	-	50

7. Studentinfor

This table holds the information of the bona-fide students who are allotted rooms. The information include matric number, lastname etc

Attributes:

Field name	Data type	Description	Size
Matric number	Text	primary key	50
Last name	Text	-	50
First name	Text	-	50

Sex	Text	-	50
School	Text	-	50
Department	Text	-	50
Level	Text	-	50
Allocated	yes/no	-	yes/no
Course of study	Text	-	50
Name of sponsor	Text	-	50
Sponsor address	memo	-	-
Next of kin	Text	-	50
Kin address	memo	-	-
Receipt number	Text	-	50
Special	yes/no	-	yes/no
Cgpa	number	-	double

8. Users

This table holds the password that is used as the security measures. Simple changing the user name and password in the table makes a change to the password. The program starts up by reading this table to confirm authorization to access the package and disallow access if password is invalid.

Attributes:

Field name	Data type	Description	Size
User name	Text	-	50
Password	Text	-	50

3. FORM DESIGN AND SYSTEM DOCUMENTATION

The system is made up of forms and reports. They are as explained below;

1. Frmsplash

This is a splash screen form that is first loaded when the application is loaded. It displays the topic under study and other information.

2. Frmlogin

This is a login form that requests the user to enter his/her password and user name for validation. It reads its data from the table "users:". The user is allowed to load the application successfully if and only if he is an authorized user of the application. It is the surety measure placed on the application.

3. Frmmain

This form is loaded first if the user is an authorized user. It is a MDI form ie it is the parent form from which all other forms can be referenced.

It has the following menus and submenus;

Menu	Submenu
File Management	exit student registration, student records, create hostel, hostel management
Reports	All allocated rooms, all unallocated rooms fully allocated rooms, partially allocated rooms, hostel by names etc
Window	rearrange
Help	Documentation, about

4. Frmstudreg

This form is loaded when the sub menu registration is clicked. It is the form that is used to collect data into table "studentinfo". It has the following fields;

Matric number, last name, first name, male, female, school, department, level, course of study, name of sponsor, sponsor address, next of kin, kin address, , special, cgpa. This information is required to be entered.

It contains the following buttons;

1. New entry: This command when clicked clears all the fields and makes them available to collect new records on a new student.
2. Create entry: This button is clicked to save the records on a particular student when entered
3. Exit: This button when clicked closes the form

5. Frmstudrec

This form is loaded when the submenu "student record " is clicked. It collects data from table "studentinfo" which is a table designed using MS FLEX GRID that takes as many rows and column as possible.

It contains a list box from which to select school and department of student, which are read from table "school", and "department" respectively.

There are buttons for certain operation on it;

4. Search: The user is required to type in the surname of the student to be searched and then click the button, this automatically highlight the specific record.
5. Exit: This command closes this form on click.

6. Frmhostel mgt

This form is loaded when the submenu "hostel management" is chosen. This form is where the actual allocation is done and other modifications.

It contains list boxes where the user selects the hostel name, he/she wants to allocate to a student.

The information of the students in the specified hostel is then displayed in the form of table. This include these fields; id, room id, hostel name, room number , capacity, allocated, sex.

To allocate room, the user clicks on a matric number and then chooses a particular room by clicking on the room then he/she clicks the “allocate room” button. This student is automatically allotted to the room in the situation where there is no mismatch in sex. If there is, it brings out a dialog box to tell the user that he/she is trying to allocate a male hostel to a female student or vice-versa.

This form contains the following:

1. Add room: this command when clicked brings out form “frmaddroom”. This allows the user to enter a new room that can be allocated to students. The user then fills in the hostel name, room number, room capacity, and sex of room members. The “create room and new” button is clicked to add more rooms while the “create and exit” button is clicked to add and close the form.
The exit button is clicked to close the form.
2. Search: the user may search for a particular room by typing it and clicking on this button. The room is then highlighted for fast access.
3. Exit: this closes the hostel management form.

To view the information of students in a room, the user simply double clicks on the room and clicks on the view button and “de-allocate” button to de-allocate a student from a room.

7. **Frmaddhostel**

This form is loaded when the submenu “ create hostel” is clicked. It gives room for entering data of newly constructed hall(s) of residence.

8. **Frmstudreg1**

This form allows for modification of records and it is loaded when the “edit student details” on form “frmstudrec” is clicked.

The “save” button is clicked to save changes made to the record.

9. **Frmrephostel**

This form allows the user to view certain queries which gives report on hostel by their names. It gives the list of students in a particular hostel in the order; hostel name, room number, capacity, allocated.