

Automation Of Collector Office

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Abstract- Collector's office has to control many departments under its working territory, state or region. The departments are controlled by employees who are further responsible for managing records of other people. Often the records are not managed properly, so we have made an online application where employees can easily login and manage the database by entering records and keeping a check on it.

This saves a lot of time as well and prevents data redundancy.

1. Agricultural department
2. Voter ID department
3. Civil project construction department
4. School and education department
5. Energy department

Collector office system will store data, edit data delete data and will access data through queries. Data is stored in the form of tables and will be entered into the system. In many similar topics of collectors office data is backed up to protect data against equipment failure. The agriculture loans will include pan id, address, occupation, etc. and its interest rate will depend on the salary .there will be proper data maintained including the details of the person by whom the loan is sanctioned. Similarity civil construction projects will include all the necessary attributes including project name, number, start date, and the id of the person who supervises it. We have third table named voter id generator which will include all necessary information related to it such as Voter ID, Voter name, Father name, permanent Address, etc. All these three tables will be linked with the employee table which has its own attributes. In this department the new projects proposed by various independent builders are proposed and then are approved by the authority taking details of the various attributes of the project. The project start date ,end date budget , no of labourers are also taken into account while deciding the fact to approve the project or not. The project once approved is then started upon under its working program. This department provides electricity as the form of electricity to the households in that area and then calculates the total amount of money the respective consumer has to pay. This department calculates the units of the electricity used by the consumer over the time period of one month and thereafter calculates his/her total billing amount by taking into consideration the total units used as well as the billing rate

calculated by the electricity board per unit. This department manages and regulates the number of schools in that particular area . This department serves as the regulatory body for the various major and minor private as well as the public schools the that area. The school details which include its name , no of students, no of teachers, contact no, address etc are also held by this department

Keywords- CSTR-PID-ZN-Fuzzy-MRAM-MATLAB.

I. INTRODUCTION

1.1 THEORETICAL BACKGROUND

Java is a popular third-generation programming language. It is the language of choice for internet and internet applications. NetBeans IDE is a free, open- source, cross-platform IDE (Integrated Development Environment) with a built-in support for Java Programming Language. It offers many features for application development such as Efficient GUI builder , Web-services, Excellent debugging, Code generation and management tools Oracle 11g Express is an freely available open- source Relational Database Management System (RDBMS) that uses Structured Query Language (SQL). It is available either under the GNU General Public License (GPL) or under other licenses. It works on many platforms, most common of which are Linux, Max OSX, Windows etc.

1.2 PROBLEM DEFINITION

To prevent data redundancy and misuse of data, we have created an application where employees can login and check the records of the various departments mentioned above.

1.3 AIM OF THE PROPOSED WORK

This aim of the proposed system is to contribute to the goal of achieving a database management system that manages to keep records of customers or projects managed by 8 the employees in the respective departments, thereby aligning with the motivation of the project.

The stated project is targeted at the delivery of a cost effective, compact and portable system that makes it the best choice of product for the end users. The ease of installation of this system aims to make it a suitable choice for easy insertion and management of records in any domain.

The work aims to not only provide a high- quality user experience, but also provide better features than the prevalent systems, while keeping in mind that these features are provided not at the compromise or loss of any other features that the existing systems provide.

II. LITERATURE SURVEY

The title of our project is automation in collector's office. This is related with collection management system in database. Main aim is to organize, control and manage collection of objects by tracking all the information related to the objects.

The tables chosen by us are agriculture loans, voter id generator, and construction and civil projects. Already work has been done on it and also going on. We'll record the information related to the departments taken. Previously there are many collection management systems were proposed like Axiell's Collections Management Software[1]

Collector office system will store data, exit data delete data and will access data through queries. Data is stored in the form of tables and will be entered into the system. In many similar topics of collectors office data is backed up to protect data against equipment failure.[2]

"In 1997, art historian and museum information studies consultant Robert A. Baron outlined the requirements for Collections Management Systems, not as a list of the kinds of collections object information that should be recorded, but rather as a list of collections activities such as administration, loan, exhibition, preservation, and retrieval, tasks that museums had been responsible for long before the invention of computers. Some conservators and institutions have taken a different approach, by assigning roles to different objects. This was achieved by renaming and remapping fields in the existing system."[3]

The agriculture loans will include pan id, address, occupation, etc. and its interest rate will depend on the salary .there will be proper data maintained including the details of the person by whom the loan is sanctioned. Similarity civil construction projects will include all the necessary attributes including project name, number, start date, and the id of the person who supervises it. [4]

We have third table named voter id generator which will include all necessary information related to it such as Voter ID, Voter name, Father name, permanent Address, etc. All these three tables will be linked with the employee table which has its own attributes.

III. PROPOSED SYSTEM MODEL

The aim of our project is:

- To restrict unauthorized access of the project and important data.
- To increase the security and safety of data as every manager has its own login area.
- To get validated data through constraints implemented on Oracle tables.
- To maintain different accounts of manager.
- To maintain different items data like New civil and construction projects, voter ID generation, agricultural details, etc.
- To search a specific item.
- To generate necessary reports like Bill Details, income details, tax payment details, etc.

3.1 Functional Module description :

AGRICULTURAL DEPARTMENT

In this module, the agricultural department contains the records of the customers where we insert Principle, rate and time, where Amount gets calculated automatically and hence we submit the data, which gets stored in the back end.

VOTER ID DEPARTMENT

In this module, the Voter ID department contains the records of the customers where we insert the information taken from the Applicants and hence we submit the data, which gets stored in the back end.

CIVIL PROJECT CONSTRUCTION DEPARTMENT

In this module, we record the details of the Projects in the territory. The records of the contractor as well as project are recorded.

SCHOOL AND EDUCATION DEPARTMENT

This module keeps the records of the various schools in the state, containing its information such as no. of students, faculties and area name

ENERGY DEPARTMENT

This department contains the details of the energy consumption by people. The Units consumed are inserted and rate per unit is mentioned and total bill gets calculated. Hence, after submission we store the whole record in the backend.

SIGN UP

The module consists the employee information. Whenever there is no employee in the office the employee signs up and the respective data gets stored and the employee can later on login in order to work on the application.

LOGIN

The module is basically used for employees to login the application. It contains the field username and password which if correctly filled then user gets access to the office.

3.2 SOFTWARE DESIGN SPECIFICATION DIAGRAMS :

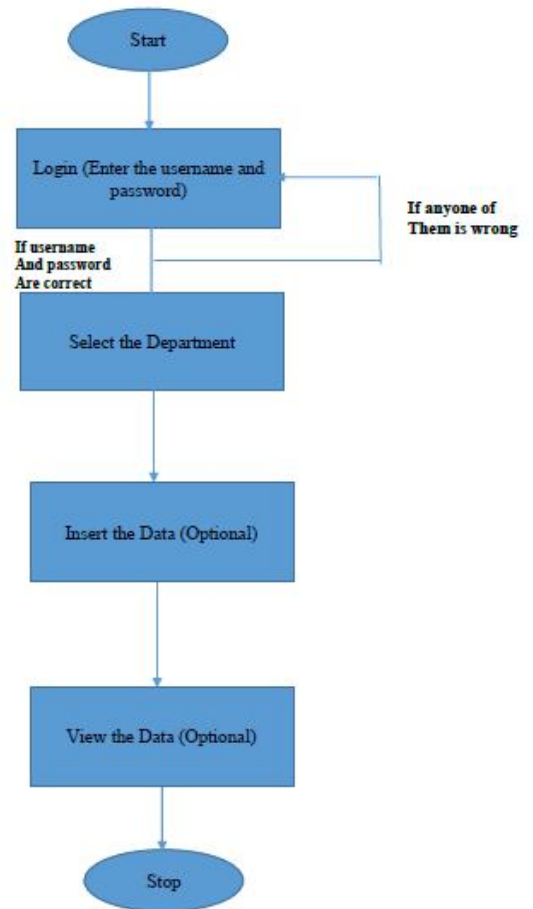


Fig 1 Module diagram

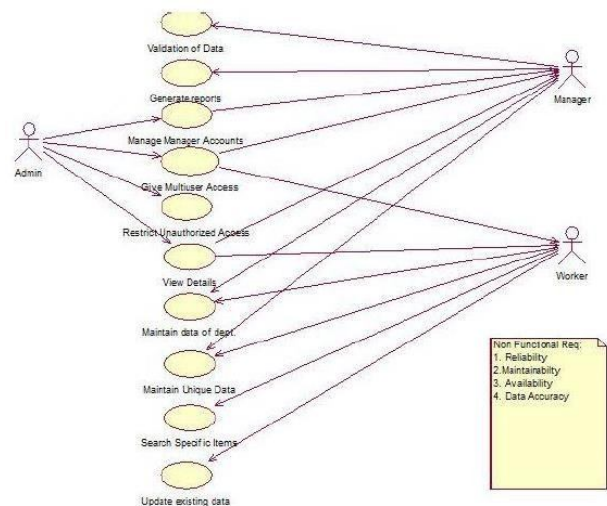


Fig 2 Use case diagram

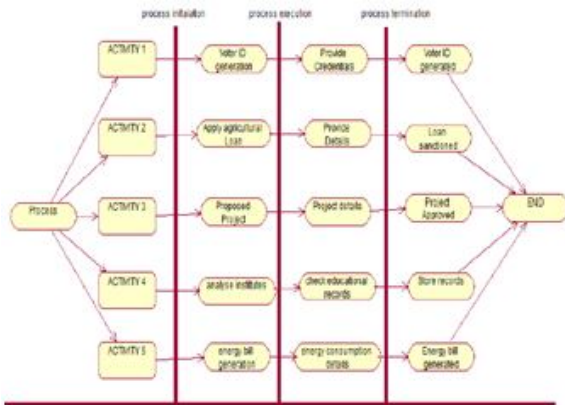


FIG 3 Sequence diagram

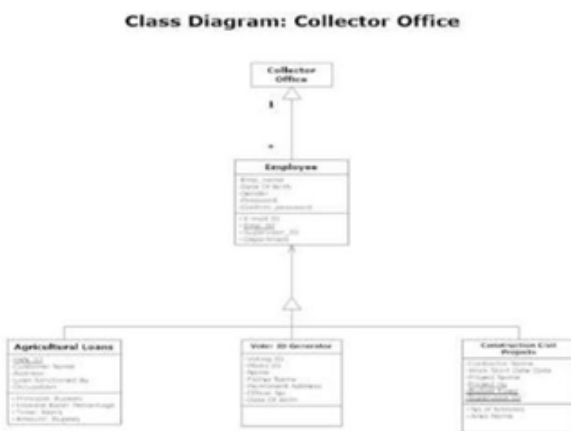


Fig 4 Class diagram

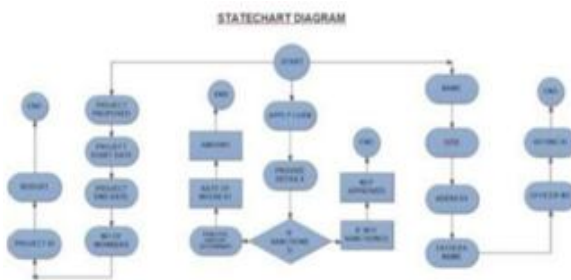


Fig 5 Statechart diagram

3.3 SYSTEM REQUIREMENTS

3.3.1 HARDWARE REQUIREMENTS

PROCESSOR : i7-6500U [CPU@2.50GHz](#) RAM : 16.00 GB
 RAM
 MONITOR : 15.6" color screen HARD DISK : 40 GB
 SYSTEM TYPE : 64 bit Operating System, x64 based processor

3.3.2 SOFTWARE REQUIREMENTS

Windows 10 Mysql
 Java Netbeans 8.2
 Microsoft word 2013 Notepad

IV. IMPLEMENTATION

Front-End:

We have used Java Netbeans 8.2 to connect with Mysql. We insert the data in Netbeans application created and the data gets stored in the database created in MySQL.



Fig 6 Login Page



Fig 7 Admin page



Fig 8 Office administrator

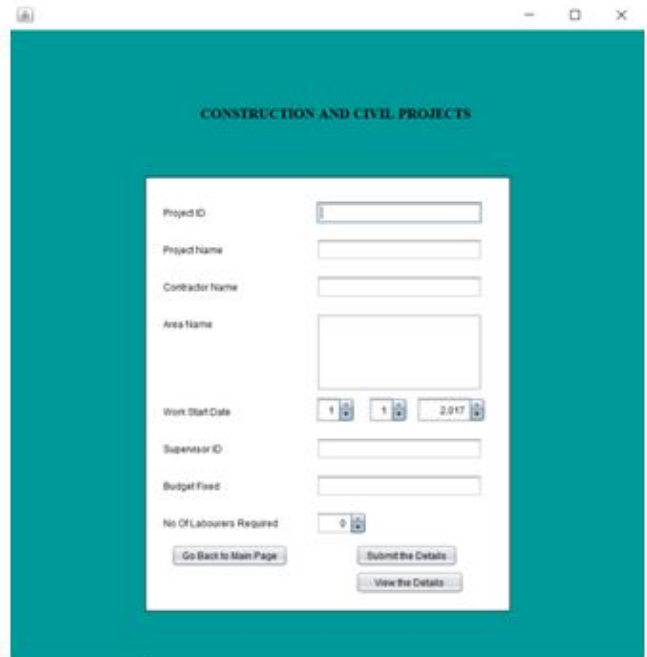


Fig 10 Civil project department

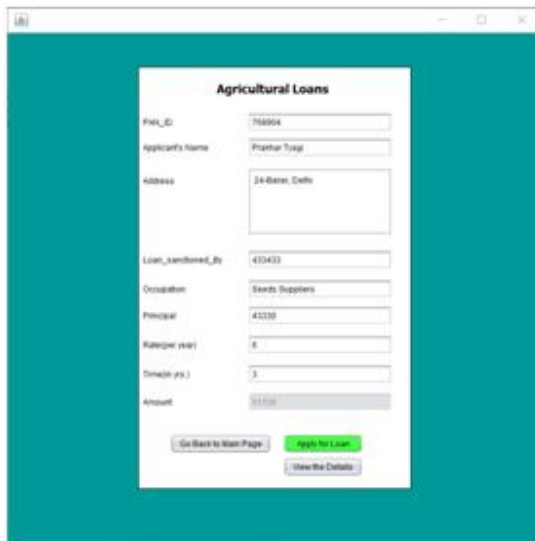


Fig 9 Agricultural loan sign up



Fig 11 Voter ID generation department

SCHOOL AND EDUCATION

School ID:

School Name:

School Type:

Address:

Contact:

No. of Students:

No. of Staff:

Fig 12 School details department

Customer ID	Customer Name	Bill ID	Address	Units Consumed	Cost per unit	Total cost
123455	Raja Patil	785432	Ball Road, Delhi	77	50.00	7750.00
123456	Rajni Khatke	785432	Rajni Nagar, D.	78	50.00	7800.00
123457	Mohd Exdar	785434	Map Road, Maharashtra	79	51.00	7981.00
123458	Arsh Gupta	785435	Sachin Chde, B.	79	52.00	7952.00
745677	Narayan Bansal	877877	Laxmi Nagar, Gh.	800	40.00	60040.00

Fig 14 Energy department details

Energy Department

Cust ID:

Customer Name:

Bill ID:

Address:

Units consumed:

Cost per unit:

Total cost:

Fig 13 Energy department

PMS ID	Customer ID	Loan Amount	Occupation	Address	Principal	Rate	Time	Amount
154321	Rahul Fadar	123456	Farmer	Green Road,	70000.00	4.00	2.0	75600.00
154322	Mohd Chudh	439543	Farmer	Cross Road,	74000.00	2.00	5.0	81400.00
154323	Rishi Sharma	125456	Wholesale Supp	Heega Mall,	77000.00	5.00	1.0	81675.00
154324	Rohan Agar	595430	Stock Supplier	Phabat Sha,	72000.00	5.00	4.0	86547.00
154325	Anur Thar	234768	Stock Supplier	Dana Park,	69000.00	6.00	3.0	81420.00
768904	Prakash Tragi	453433	Goods Supp	24 Bazar, D.	43300.00	6.00	3.0	51129.00

Fig 15 Agricultural loan details

Name	Father Name	Voting ID	Permanent Add.	Officer No.	Date of Birth	Photo ID
Rajul Sahni	Ajit Sahni	8879578799	Agar Circle, Dabur	124356	1997-01-01	12734
Anshul Chaudhri	Sagar Chaudhri	8782676248	Kalyan Road, S.	879498	1997-08-08	87907
Shrey Nigam	Dipu Nigam	4087654589	Chamra Road	491798	1997-06-12	47548
Akash Chandra	Prakash Chandra	2488765432	Tyasa Apartments	578234	1997-10-26	87548
Anup Sharma	Anand Sharma	842345678	Sony Cross Road	567894	1998-03-23	34521

Go Back to Main Page

Fig 16 Voter ID details

School ID	School Name	School Type	Address	Contact No.	No. of Students	No. of Faculty
123450	Shree Public S.	Convent	Agar Road, M.H.	8876543287	20000	745
123455	Agony Public Sch.	Convent	Widya Marg, Dabur	8876543425	10876	345
123460	Mahavee Public S.	Convent	Tyasa Park, De	8876543210	10000	200
123467	Hinduva Public S.	Convent	Card Road, M.	8876543198	10012	95
123468	Peta Public School	Convent	Maharaja Park	8876543112	8000	295
123469	Datta Public Sch.	Convent	Sulashree Nagar	8876543138	3000	123
123789	Devi Public Sch.	Private	Parashada, Bar	9987765510	7000	855

Go Back to Main Page

Fig 18 School details

Project ID	Project name	Contractor no.	Area name	Work Start Date	Supervisor ID	Budget Fixed	Laborers Req.
14310	Mall Construct.	Vanish Contra.	Agwara Marg	2017-09-02	123675	88765.00	478
14325	Bridge Const.	Anand Contra.	Raja Park, De.	2017-08-02	123456	88000.00	550
14326	Bridge Const.	Raja Contractor	Peta Park St.	2017-09-01	123455	87000.00	850
14327	Highway Con.	Shelkar Con.	Kalyan Road	2017-11-06	123451	98000.00	850
14328	Road Const.	Beta Contractor	Datta Nagar	2017-11-04	123453	99076.00	350
14329	Building Const.	Alpha Contractor	Sony Road	2017-07-04	123434	90788.00	200

Go Back to Main Page

Fig 17 Civil project registration details

BACK-END:

SQL DATABASE COMMANDS RUNNING THE DATABASE USING THE FOLLOWING METHODS.

```

Field      | Type      | Null | Key | Default | Extra
-----|-----|-----|-----|-----|-----
emp_ID    | char(6)   | NO   | PRI | NULL    |
emp_name  | varchar(30)| YES  |     | NULL    |
supervisor_ID | char(6)   | YES  |     | NULL    |
dept      | varchar(50)| YES  |     | NULL    |
email_ID  | varchar(50)| YES  |     | NULL    |
password  | varchar(30)| YES  |     | NULL    |
c_password | varchar(30)| YES  |     | NULL    |
DOB       | date      | YES  |     | NULL    |
gender    | char(1)   | YES  |     | NULL    |
    
```

Fig 19 Table employee

```

Field      | Type      | Null | Key | Default | Extra
-----|-----|-----|-----|-----|-----
username  | varchar(50)| NO   | PRI | NULL    |
password  | varchar(50)| YES  |     | NULL    |
    
```

Fig 20 Table employee login

```

Field      | Type      | Null | Key | Default | Extra
-----|-----|-----|-----|-----|-----
PAN_ID    | char(6)   | NO   | PRI | NULL    |
cust_name | varchar(30)| NO   |     | NULL    |
loan_sanctioned_by | char(6)   | NO   |     | NULL    |
occupation | varchar(30)| YES  |     | NULL    |
Address   | varchar(50)| YES  |     | NULL    |
Principle | decimal(9,2)| YES  |     | NULL    |
rate      | decimal(4,2)| YES  |     | NULL    |
time      | decimal(3,1)| YES  |     | NULL    |
Amt       | decimal(10,2)| YES  |     | NULL    |
    
```

Fig 21 Table for agricultural loans

Field	Type	Null	Key	Default	Extra
project_ID	char(5)	NO	PRI	NULL	
proj_name	varchar(30)	YES		NULL	
contractor_name	varchar(30)	YES		NULL	
area_name	varchar(50)	NO		NULL	
work_start_date	date	NO		NULL	
supervisor_ID	char(6)	YES		NULL	
budget_fixed	decimal(12,2)	YES		NULL	
laborers_req	int(3)	YES		NULL	

Fig 22 Table for construction and civil projects

Field	Type	Null	Key	Default	Extra
name	varchar(50)	NO		NULL	
Father_name	varchar(50)	YES		NULL	
voting_ID	char(10)	NO		NULL	
per_address	varchar(60)	YES		NULL	
officer_no	char(6)	NO		NULL	
DOB	date	YES		NULL	
Photo_ID	char(5)	YES		NULL	

Fig 23 Table for Voter ID generation

Field	Type	Null	Key	Default	Extra
name	varchar(50)	NO		NULL	
Father_name	varchar(50)	YES		NULL	
voting_ID	char(10)	NO		NULL	
per_address	varchar(60)	YES		NULL	
officer_no	char(6)	NO		NULL	
DOB	date	YES		NULL	
Photo_ID	char(5)	YES		NULL	

Fig 24 Table school

Field	Type	Null	Key	Default	Extra
cust_ID	char(6)	NO	PRI	NULL	
cust_name	varchar(30)	YES		NULL	
bill_ID	char(6)	YES		NULL	
address	varchar(30)	YES		NULL	
units	int(7)	YES		NULL	
cost	decimal(4,2)	YES		NULL	
total	decimal(7,2)	YES		NULL	

Fig 25 Table energy requirements

V. CONCLUSION

We conclude, using this application we can easily insert the records and maintain them for long period of time. There is no chance of losing data and prevents data redundancy. We have prepared application where no other person other than the employee of the collector office can make changes in the database. The departments we used were Agricultural loans, Civil and construction projects, Voter ID department, and school and education department and energy consumption department. The main records are to be recorded and handled by the collector office’s employees in order to keep a check on the customers and applicants.

The employees cannot lose the data as there is delete option provided, but could be altered from the backend for future purpose. We can easily view the present details of the department so that we can cross check or do verification.

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