

Tax Collection Software using MySQL and Python

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Abstract - In most of the rural areas tax collection is done by traditional receipt book method which includes lot of human efforts and paperwork. We have designed a software, a centralized system, a system that can handle huge data by considering security, authentication, private policies which can be synchronized with online secure and strong server. For this purpose, we have used MySQL servers which have some gold features and much more secure than other databases. This can be also used to calculate tax of individual. We have added some extra features like online data recovery and online support in this software. The authorized person can access the database by his securely login. This system is helpful for reducing paperwork. Aim of this project is to bring transparency and efficiency in tax collection in rural areas.

I. INTRODUCTION

Our life is changing very fast and the role of digitalization in our day to day life is increase at very at rate. This is the motive behind our project. In most of the rural areas tax collection is done by traditional receipt book method. For this we required lot of human efforts as well as paper work. For reduce this efforts and paper work we have designed software. This software creates an online database on the

server where we can register. When we register and pay tax user will get online receipt of payment through his/her email account. In this software we have also added some extra features like online data recovery if we by chance lost our information and this software also has online support which gives us efficiency for our proper work. The authorized person can access the database by his securely login. Our online tax collection software brings transparency and easiness in tax collection in rural areas. In today's era of technology, where machines are being extensively used in all the fields we are trying to emulated concept, which will be of great use in public.

II. LITERATURE REVIEW

Electronic tax payment was first coined and implement in the US in 1986. Today, electronic taxation has been extended to many countries. Electronic taxation differs among countries hence the name of the system also differs from country to country. Electronic declaration is named electronic tax filing in International literature. e-tax payment is also called online taxation payment (UN, 2007) or e-tax lodgement.

Reima Soumi has discussed the meaning of e-taxation and also deals with the best

practices in technology which would further help in the development of tax administration system. Dr. Dimitris Gousco discussed about the concept of e-government, strategic objectives for electronic services, business planning for electronic services, technologies for delivering electronic services and evaluating the performance of electronic services. Subhash Bhatnagar, has discussed about the different perceptions and delivery models of e-government and also about the cases resulting in multiple benefits: improved service delivery; reduced corruption; increased transparency; increased revenue; cost reduction; and empowerment. Sanjiv K Chaudary in his article discussed about the advantages of E-Taxation and to provide clarity and certainty on various tax related issues to assess.

III. METHODOLOGY

A. Materials

/Components/Flowchart/Block

Diagram/Theory:

For developing this software we have used python and some other tools:

- [1] MySQL workbench 8.0 CE, MySQL server
- [2] Tkinter (For developing User Interface)
- [3] PAGE GUI builder 4.19
- [4] pyinstaller
- [5] Pycharm Community version 2018.3.3
- [6] ActiveTCL 8.6.8.0

MySQL: Mysql is an open-source relational database management system (RDBMS). Its name is a combination of "My", the name of co-founder Michael Widenius's daughter, and "SQL", the abbreviation

for Structured Query Language. MySQL is free and open-source software under the terms of the GNU General Public License, and is also available under a variety of proprietary licenses. MySQL was owned and sponsored by the Swedish company MySQL AB, which was bought by Sun Microsystems (now Oracle Corporation). In 2010, when Oracle acquired Sun, Widenius forked the open-source MySQL project to create MariaDB. MySQL is a component of the LAMP web application software stack (and others), which is an acronym for Linux, Apache, MySQL, Perl/PHP/Python. MySQL is used by many database-driven web applications, including Drupal, Joomla, phpBB, and WordPress. MySQL is also used by many popular websites, including Facebook, Twitter, Flickr, and YouTube.



2. **Tkinter:** Tkinter is a Python binding to the Tk GUI toolkit. It is the standard Python interface to the Tk GUI toolkit, and is Python's de facto standard GUI. Tkinter is included with standard Linux, Microsoft Windows and Mac OS X installs of Python. The name Tkinter comes from Tk interface. Tkinter was written by Fredrik Lundh. As with most other modern Tk bindings, Tkinter is implemented as a Python wrapper around a complete Tcl interpreter embedded in the Python interpreter. Tkinter calls are translated into Tcl commands which are fed

to this embedded interpreter, thus making it possible to mix Python and Tcl in a single application. Python 2.7 and Python 3.1 incorporate the "themed Tk" ("ttk") functionality of Tk 8.5. This allows Tk widgets to be easily themed to look like the native desktop environment in which the application is running, thereby addressing a long-standing criticism of Tkinter.



ActiveTCL: ActiveState Software Inc. is a Canadian software company headquartered in Vancouver, British Columbia. It develops, sells, and supports cross-platform development tools for dynamic languages such as Perl, PHP, Python, Ruby, and Tcl, as well as language distributions and enterprise services. ActiveState products include: ActiveState Komodo, an integrated development environment (IDE) for dynamic languages; Perl Dev Kit (PDK) and Tcl Dev Kit (TDK), productivity and deployment tools for Perl and Tcl programmers; and free and commercial language distributions, ActivePerl, ActivePython, and ActiveTcl for AIX, HP-UX, Linux, OS X, Solaris, and Windows.



Also we have used these python libraries:

- [1] Tkinter
- [2] mysql.connector
- [3] dbConnect
- [4] time
- [5] smtplib
- [6] openpyxl
- [7] reportlab



B. Synthesis / Method:

First we designed the user interface by using one of the popular python library i.e. tkinter. For this purpose, we had used one primitive tool that is Page GUI builder. Then we installed MySQL server and created one connection on local machine. Further we created database and tables on that server. Now we connected python application with mysql server with the help of mysql connector. For Authentication or user login, we have used same database where username and password is predefined. We have designed different modules for adding new entries, for accessing data, for updating data, for accessing another village data. We have created different tables for different villages in same database in order to connect all the village to one centralized system. Further we designed administrator suit to modify or delete data. Without administrator

rights one cannot modify that data. We have used SMTP server to send online receipts. Which provides us better security and end to end encryption. Now one extra module is needed to connect the user with developers. Online Support module is designed for that purpose. Tax Calculator module takes the primary data such as type of building, area of open space, age of building etc. and evaluates tax for an individual. For Registration of this software we have developed one website where user can get sample software and updates of his product.

C. Characterization/Pseudo Code/ Testing:

First user has to enter his username and password which can be verified online then only user can access this software. Now application get connected to mysql server and verifies password. In order to enter new data values are collected from user and then all the values get stored into databases. Now at the time of payment system first shows actual amount of payment of specific individual and after payment paid amount data gets stored in another table in same database and user gets receipt through his email. In order to access the data first it gets connected to server and fetches all the data from it and displays it in list box. Application can also export this data to Microsoft excel with the help of openpyxl library. Now for modification of data user have to take permission from administrator. Then the specifications and modified values gets stored in another table. User can not directly modify that data. Through Administrator tool data in original table gets modified and backup of this data gets stored into another table. So in this way this

application works and handles all the data easily and efficiently.

IV. RESULTS

It works properly even when client gets connected to server by mysql remote connection. Unauthorized login gets prohibited at time of login into main application. Data can be efficiently accessed and entered into database. Consumer gets receipt and confirmation of payment from his email. Now an individual cannot directly modify that data. Authentication from administrator is needed to update that data. This Database can be also accessed from our Smart phone. So it is quite efficient for user in order to access the data anytime, anywhere.

V. LIMITATIONS

We need one dedicated high - end machine and strong internet connection to handle this server. Which should run for all the time without any failure. It takes quite more time to connects with MySQL servers. Tables in UI are not well organized so user might face some problems while accessing that data. User cannot get printed receipt after transaction.

VI. FUTURE SCOPE

1. UI can be enhanced by using by using better tools of graphics designing e.g. kivy, wxpython, pyQT etc.
2. We can use Android platform to build this whole system, it may increase efficiency in this work.

3. One can use text SMS service to deliver receipts to the consumer
4. Other online databases which are hosted from strong machines can be used to store this data

VII. CONCLUSION

This system is useful for tax collection in rural areas. It's quite better than traditional method of tax collection. One can access this data anytime and from anywhere. Data is stored into strong MySQL servers so it cannot be lost due to any system failure. One cannot modify data without administrator permissions. So aim of this project is achieved

VIII. ACKNOWLEDGEMENT

No project is ever a single person's effort. It is the cumulative process of several people coming together and working in a particular direction and this course project is no exception either! We are grateful to a number of individuals whose professional guidance along with encouragement have made this project successful. We have great pleasure in presenting the paper on "Tax Collection Software by using MySQL and Python" under the guidance of Prof. A.J. Tathe.

IX. REFERENCES

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