A REPORT

ON

DATABASE SYSTEM

BY

Ayush Singh 2017B3A70652P

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AT

GMR VARALAKSHMI FOUNDATION

A Practice School-I Station of

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI

(July, 2019)

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Station: GMR Varalakshmi Foundation **Centre:** Delhi

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Title of the Project: Database System

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Key Words: MySQL, Python, Tkinter, Openpyxl

Project Areas: Database Management

Abstract - This report contains information about the group project assigned to its authors as part of their Practice School-1 programme. The aim of the project is to create an application to help the institute we are working for, G.M.R. Varalakshmi, to keep track of the people who apply for various certificates. This report contains information about how we approached the problem at hand, how we came up with the final solution.

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Introduction

The Shahbda Centre of CSR branch of GMR Varalakshmi Foundation provides poor and disabled people easier access to government opportunity for availing benefits such as Adhar Card, Disability Help, Economic Help, Widow fund, etc. The method they use for storing and accessing the data is manually writing on registers. As it is obvious, this leads to inefficiency as data is lost and cannot be used for analysis or even shared to the main branch of GMR Varalakshmi. Our project aims to provide the institute with an easy to use interface for storing and accessing data. The data will be stored on a table on MySQL database to access it through a set of fixed operations. The users will only interact with a simple GUI. The data that is entered will also be stored on Excel for easy sharing through desired methods such as email.

Main Text

SOFTWARES USED

MySQL

MySQL is a database management system software. It is the most widely used application for managing data. The data which we take from the program is stored in tables in DBMS with the help of predefined queries. Predefined queries are also used to return specific type of data from the DBMS software.

Python

Python is a high level programming language used to create a lot of industry level software such as web applications, data analysis software, utility software and more. In our project, we have used python to take input from the user with the help of its GUI framework. Afterwards it was used to convert the entered data to a predefined query which was used in SQL to manipulate data.

Tkinter

Tkinter is one of the most popular libraries of python. It is used to create GUI applications. Several features of this library was used in our project. It was used to take input from the user through text fields and drop down lists. The buttons were used to execute a set of predefined commands. The labels were used to represent data.

Python MySQL Connector

After we obtained information from the user, it was used to create a query which was executed on the MySQL database. The transfer of this query from program to Database Management System (DBMS) is done via MySQL connector. Similarly, the transfer of the response from DBMS to python script is also done through SQL connector.

Openpyxl

This is a python library used in management software. It lets us create, read and manipulate data to and from an excel sheet. The data entered by the user along with status is entered in a new record in a given excel sheet. This excel sheet can be easily shared or used for analysis.

Sublime Text

This was the IDE used for development of the python script. It has a clean, minimalistic design with easy to use interface. It is well suited for beginner software developers.

Working of the program

Given below is a screenshot of the application for the disabled category.

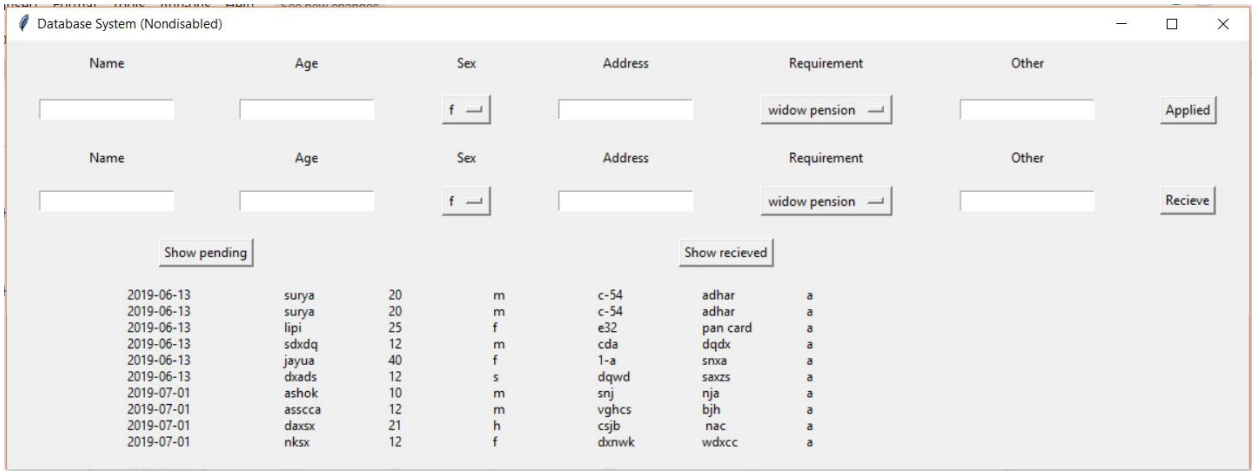
Adding a new entry: When someone comes to the centre for application of any document, we enter their details and type of document in the text fields or select them from drop down lists. We click the apply button to add the entry.

Updating the entry: When an applicant receives his/her document, we want to change the status of his application from applied to received. To do this, the user again has to enter the applicant's name, age, sex, address, disability and requirement for the database to locate the respective entry. After entering the details, clicking the 'Receive' button updates the applicant's status from 'Applied' to 'Received'.

Through these two functions we are able to efficiently manage the data of the applicants in our database.

Show Pending: This button is used to show the details of the applications which are submitted but not received yet. A record is put here when user enters details of an applicant and clicks the apply button.

Show Received: This Button is used to show the data of the applications which are successfully received by their respective applicants. Updating the database by entering details and clicking the ‘receive’ button transfers a record from applied list to receive list.



Exporting the data into an Excel workbook: The entries are automatically added to an Excel workbook when we click the ‘Apply’ button and automatically updated when we click the ‘Receive’ button along with the date of submission.

	A	B	C	D	E	F	G
1							
2	ajay	32	m	a-10	economic help	2019-07-03	applied
3	ajay	32	m	a-10	economic help	2019-07-03	recieved
4	surya	20	m	c-54	adhar card	2019-07-03	recieved
5	vijaya	25	f	b-19	bank account	2019-07-03	applied
6	vijaya	25	f	b-19	bank account	2019-07-03	recieved

Conclusions / Recommendations

In conclusion, the project made will be able to help the Shahbda Centre to accomplish the following :

- Storing the data securely
- Instantly accessing data to find out about pending and received applications
- Easier sharing of files through Excel which is now automatically generated by the program

Recommendation would be to extend this application as and when possible to all the other facilities that shahbda centre provides such as Pregnancy Care, Nursery, Library, etc.

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Glossary

SQL - Structured Query Language

Language used to interact with DBMS to create,update,delete and manipulate data.

GUI - Graphical User Interface

A visual interface used to feed information into an application using lists and text fields.

It is used to execute commands using buttons, fields, etc.

RDBMS - Relational Database Management System

A specific kind of DBMS such as MySQL which stores data in form of tables comprising of rows and columns.

Library - A set of predefined functions for any programming language.

IDE - Integrated Development Environment

A software system which is used by developers for creating other software.