PEN:190840131001

Practical 2:

Aim: To perform the system analysis task for your system:

Practical 2.1: SRS (Software Requirements Specifications)

Software Requirements Specification

for

<Census Management System>

Version 1.0 approved

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

Census has been a reliable exercise from time, from where government rely for decision-making, and aids for administration and planning.
"Just like we cannot survive without roads and bridges, the country does not function well without an updated census to distribute funds to areas that most need them and to support community decisions and their own future."
The increasing complexity of modern life means a greater need to plan housing, schools, roads, transportation and a vast range of social and economic requirement for nation. This cannot be done without a detailed count of the population. Census is being officially managed by some organizations or government, for example the National Population Commission(NPC).

1.1 Purpose

The major aim of the project is to design a system that will have all information about human population and retrieving of the data when ever needed in the society. It focuses on the registration, retrieval and management of information about individuals in the society.

The purpose is that develop computerized software that automatically stores and retrieves all information on human population. Develop a reliable system that could be used in collecting data / information on human population. Develop a system that will support direct access to the specific and required information.

1.2 Document Conventions

-**Bold Fonts**- headings, for highlighting the main figures or data.

-(%)- to show the percentage rate.

-underline- to show to particular heading of the data table.

1.3 Intended Audience and Reading Suggestions

The document is intended for the clients below:
Developers: The developers will be able to access the various features provided by the application thus increasing the security.

Users: Users inclue the field clerks and supervisors of the system.

System Administrators: They will ensure that the system is working well and will be responsible of managing the user's database.

Technicians(Tester): They will test the system and also performthe task of troubleshooting and maintaining the system.

1.4 Product Scope

The system will allow the institution to manage its information effectively. This system will provide a more reliable alternative to the existing system by ensuring efficient information retrieval, secure and convenient mode of storing data and database management. The system

will be integrated in parallel with the existing system. As its services are to enhance the existing one, it will not replace the existing one. This system requirement document is the initial release and will only cover the requirements through preliminary analysis of the proposed system's features. These requirements have been developed through intensive consultations with users and include a summary of all the necessary assumptions and relations. The system provides ultimate protection against unauthorized access the system which contains the organizations data by setting up log-ins. It will have a large database that would provide enough space to store the people's records gathered from the field.

1.5 References

https://www.projecttopics.org/computer-based-census-management-system.html

https://pub.abuad.edu.ng/Open_Access_Research_Projects_of_Universities_-_Batch_2/COMPUTER%20ENGINEERING/COMPUTER_BASED_CENSUS_MANAGEMENT_SYSTEM.pdf

https://www.docsity.com/en/computerized-census-management-system/5383539/

2. Overall Description

2.1 Product Perspective

The product is distributed but requires web server software to operate. It has two external interfaces consisting of a configuration interface and a client interface. Both require the use of a web-browser running on the client computer. The product is designed to run on existing hardware software.

2.2 Product Functions

- **Data Input**: Data will be take input directly by the system users
- **Data Processing**: Data processing will be on the basis of first come first served. i.e. the first bit of data to be entered in the system will be the first one to be proceed.
- **Data Output**: Processed data will be displayed on the screen first to view if there are any errors that are to be removed before it may be sent to the printer incase a hard copy is required.
- **Control**: The system will be able to provide some useful controls such as navigating from one user to the next or previous. It will also provide the last and first options. Any user who is to access the system will be required to log into the system using a valid password and username.

2.3 User Classes and Characteristics

The users of the system have different skills and some will require a lot of training to be able to use the system comfortably. In this case, use of menus in the application system will be a very good option so as to avoid a lot of training. In addition to menus, there will be the need to come up with a user guide that will be able to show the instructions on what is performed in the system.

The general characteristics of the users are:

- **Public User :** All the users must have knowledge about basic process to operate the system.
- **Employees :** Users at the operational level have skills for comprehensive data capturing, data entry and manipulation of the databases.
- **Admin** : Users at the management level use the system to study summarized data and for strategic decision-making.

2.4 Operating Environment

The product will be operating in Windows OS. The Census Management System is a website and will run in all popular browsers Google Chrome, IE, Mozilla Firefox. The only requirement to use the online product is Internet connection and Smart gadget.

2.5 Design and Implementation Constraints

Any update regarding the figures of the statistics or data of census is to be recorded to have update and correct values, any manipulation that has been made should be in the history of changes or updation, the percentage rate should be calculated by itself correctly by the record updation or by new entries.

2.6 User Documentation

The user documentation will include:-

- The user will be able to download user manual from user guide or help section.
- Help button will be available to make the interaction more convenient.
- Video tutorial will be available for further guidance in many languages.

2.7 Assumptions and Dependencies

- The system assumptions and dependencies that relate to the requirements here are:
- That the sample interviewed and respondents of the questionnaires adequately represent the entire population and that the computer system shall fully support the application.
- The systems are meant only for users running the windows operating systems and the users shall keep to the domain scope and not traverse it.
- The system is not supposed to exceed the stated budget since this may lead to omission of some necessary requirements that are started in this project.

3. External Interface Requirements

3.1 User Interfaces

The user interface will provide usability to the user. This will be made possible by the fact that the access windows are limited and the use of menus. Moreover it will provide the ability to search for reports by category for faster reference.

3.2 Hardware Interfaces

- Hardware contains the components that are used by the user to interact with the system either in inputting or retrieving information.
- The mouse will be used to navigate various windows/sections required by user.
- The keyboard will be used for data entry to the screen by admin.
- The monitor will be used to show information inputted or retrieved by the user.
- The database will serve as the information repository.
- The central processing unit will enable control of writing to and retrieving information from the database.

3.3 Software Interfaces

The application will be communicated with the database through GUI and SQL. There will be many forms to allow user interactivity with the system. It will provide links which will guide the user to various pages.

3.4 Communications Interfaces

This project supports all types of web browsers. We are using electronic forms for user registeration or for login base for admin to managesl the system. User can register in the system via email or via aadhar number. Employees and Admin can modify and manages the data in the system. Employees and Admin can operate the system by their employee id and password for which again electronic forms we are using.

The system shall then be stored into the database then retrieved when required. The system shall also ensure that no resource information is deleted maybe by negligence of users.

4. System Features

4.1 System Feature 1

4.1.1 Security : Security of data is the major feature this system will provide. Administrator has highest priority of access to the database thus increasing data integrity. The risk of losing data or having data corrupted is very high and could cost the institution invaluable expense in data recovery.

4.1.2 Safety: The server should be serviced regularly to ensure that it runs properly and the data saved at consecutive intervals. It has also highest priority.

4.1.3 Modification: Data input ,data update and data deletion is performed by the employees. It has medium priority. If employees make unnecessary changes , then employee must have to pay penalty.

4.1.4 Data Access: User can access the data and can get information about the census. It has the lowest priority.

4.2 System Feature 2

- **Functional requirement**

  Each user have a user email and aadhar number and this information is required before the user is allowed to access any information from the database thus integrity is enhanced. It has medium priority.

  The system will also ensure that the data and information is safe from unauthorized users by use of username and password.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- The web application will support simultaneous user access only if there area multiple terminals.
- The application shall be running on a hard disk with 160GB capacity, this is where the database shall be located and it provides enough memory to store volumes of files and records.
- Only textual information will be handled by the software. Amount of information to be handled can vary from user to user.

5.2 Safety Requirements

The server should be serviced regularly to ensure that it runs properly and the data saved at consecutive intervals. Power is a significant features and Uninterrupted Power Supply always on standby incase power surges or blackouts that could cause fire breakages or loss of data.

5.3 Security Requirements

The application will ensure that only the authorized users will gain access to the resources by the use of username and password. Reports will be kept secure allowing access to only authorized users.

Measures to ensure security is enhanced:

- A firewall to protect data.
- Regular security tests and processes.
- Implementing and maintaining an information security policy.

5.4 Software Quality Attributes

1. **Maintainability**

   The system shall be able to provide room/space for future changes including addition of more features, removal of some unwanted features and should also be able to change with the new

operating system and hardware. Changes can be made to the system in future through upgrading, degrading and adding more features to it. This enables its survival and reliability in future.

2. **Reliability**

The system shall be available to the users at all time and it should provide the expected results. In case of any failure, system down time should be very minimal. Backups shall also be done on a daily basis so as to provide will see to it that failure of the system kept to the minimum.

3. **Usability:** The system should be easy to use by all the users,employees and the admin.
4. **Extensibility:** The system functionally should be easy to extend to include features that will be necessary in the future.
5. **Evolution:** The system should provide flexibility and production of new version suited for new environments and changing needs.
6. **Correctness:** The system will provide the correct information about the census.
7. **Robustness:** when any invalid or unexpected errorness inputs are done , it will remove the errors.

6. Other Requirements

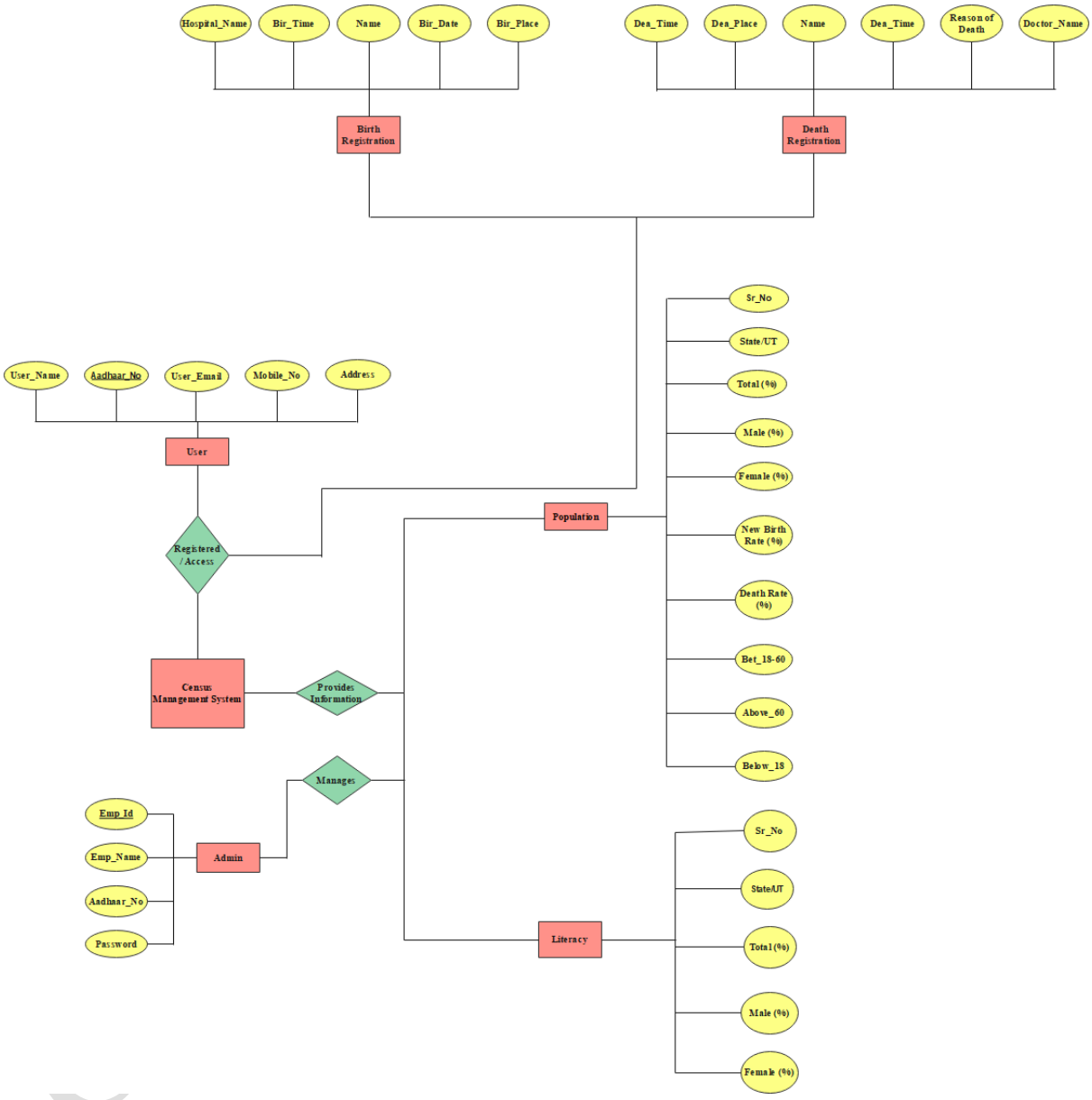
- Request sent by user to the government commission whenever he/she wants to complaint about anything.
- Acts & Rules will be shown to user whenever they will click the "ACTS & RULES' column
- System should automatically stores and retrieves all information on human population.

Appendix A: Glossary

1. **ERD :** Entity relationship diagram
2. **DFD :** Data flow diagram
3. **SRS :** Software requirements specification
4. **MS SQL :** Microsoft structured query language
5. **RAM :** Random access memory
6. **CPU :** Central processing unit

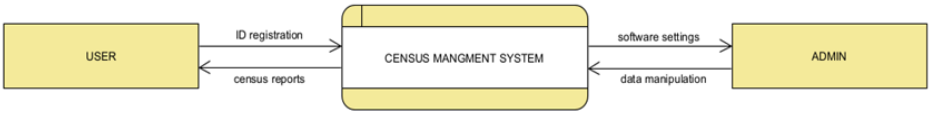
Appendix B: Analysis Models

ER Diagram:

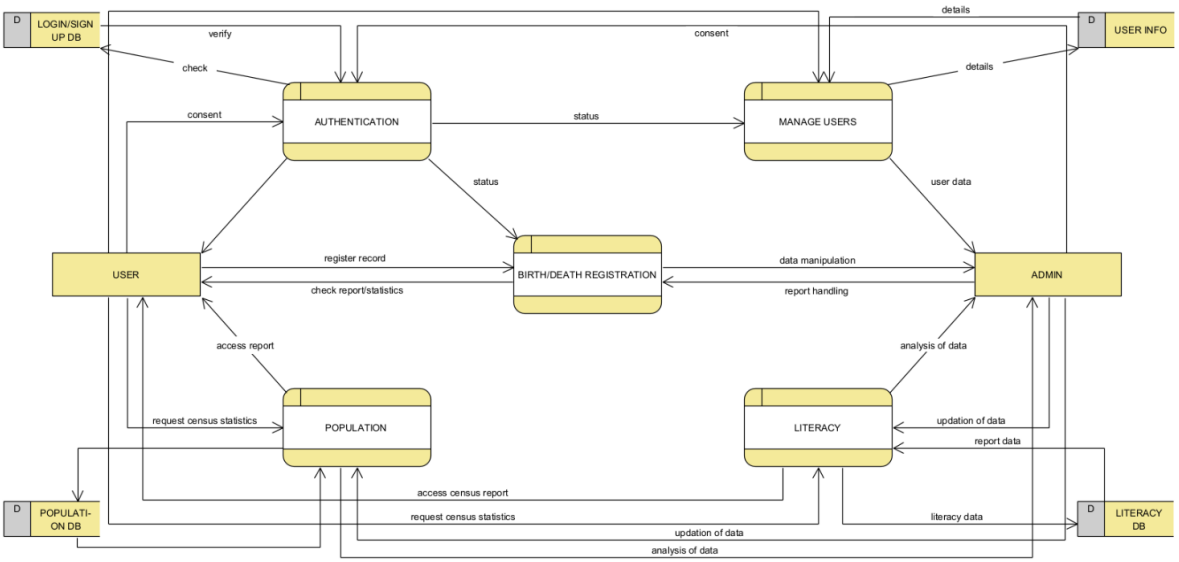


Data Flow Diagram:

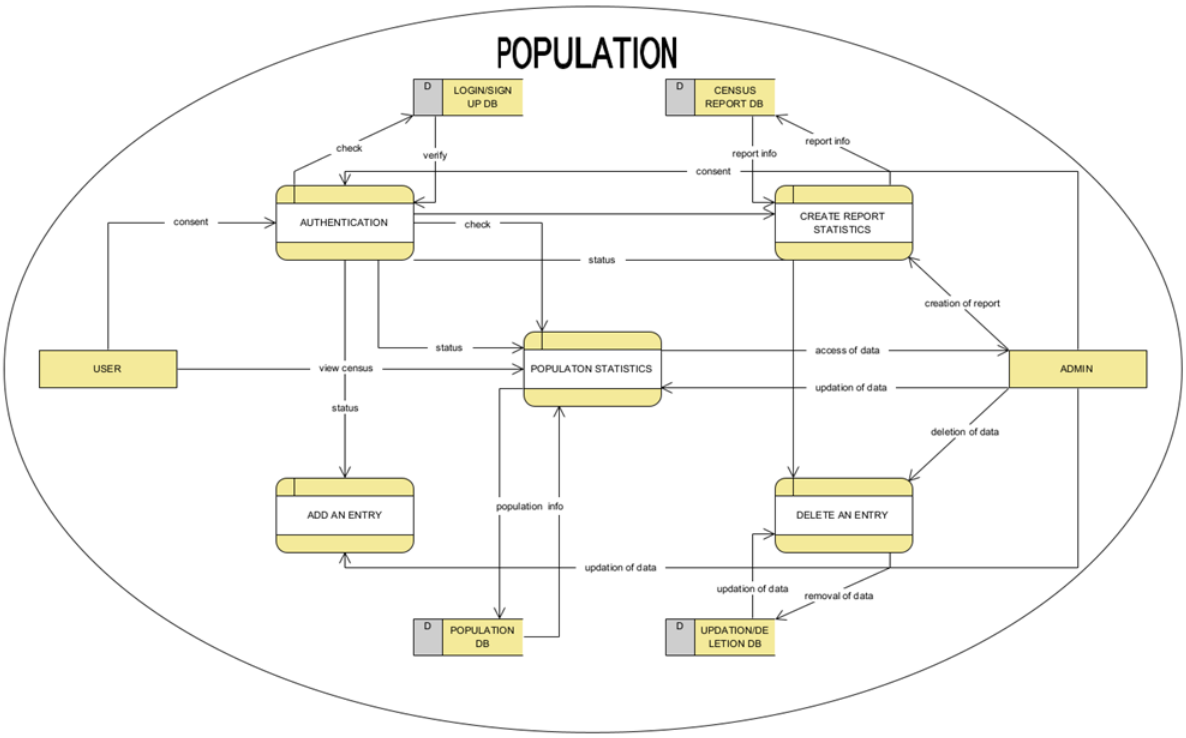
Level 0 Diagram :



Level 1 Diagram :



Level 2 Diagram :



Appendix C: To Be Determined List

https://www.projecttopics.org/computer-based-census-management-system.html

https://pub.abuad.edu.ng/Open_Access_Research_Projects_of_Universities_-_Batch_2/COMPUTER%20ENGINEERING/COMPUTER_BASED_CENSUS_MANAGEMENT_SYSTEM.pdf

https://www.docsity.com/en/computerized-census-management-system/5383539/