Ex. No:2   SOFTWARE REQUIREMENT SPECIFICATION

for Passport Automation system

AIM:

To write the software requirement specification for Passport Automation System.

1.   Introduction:

Passport Automation System is an interface between the applicant and the authority responsible for the issue of passport. It aims at improving the efficiency in the issue of passport and reduce the complexities involved in it to the maximum extent possible.

1.1   Purpose:

If the entire process of 'issue of passport' is done in a manual manner then it would take several months for the passport to reach the applicant. Considering the fact that the number of applicants for passport is increasing every year, an automated system becomes essential to meet the demand. So this system uses several programming and database techniques to elucidate the work involved in this process. As it is a matter of national security, the system has to carefully verify to satisfy it.

1.2   Scope:

This system provides an online interface for the applicant to submit the application form filled with details. It also provides payment facilities for the user to pay online. The details given by the applicant is cross-checked with already existing information in other databases. The system also provides the user with options to check the status of his application, for renewal of expired passports and make changes to existing information. The passport officer can update the status of the application, view the verification report submitted by the police and access the information submitted by the applicant for verification. The police can submit the verification report using this system.

1.3   Definitions, Acronyms and Abbreviations

- Administrator/Passport Officer - refers to the authority who is vested with the privilege to manage the entire system. It can be a higher official in the Regional Passport Office of the Ministry of External Affairs

- Applicant – one who applies for the passport

- PAS – Passport Automation System

- SRS – Software Requirements Specification

- LAN - Local Area Network

- GUI – Graphical User Interface

1.4   References

1.5   Overview:

SRS includes three chapters.

The 1st chapter is the Introduction specifying the purpose and scope of the PAS system. The 2nd chapter is the Overall Description which includes the product perspective, product functions, the user characteristics and the constraints.

The 3rd chapter is the Specific Requirements which includes the software product features, the functional requirements, the product requirements for safety and performance, and the system attributes.

2.   Overall Description

1.1   Product Perspective

The PAS acts as an interface between the applicant and the passport officer. It tries to make the interface as simple as possible at the same time not risking the security of data stored. The processing of the application is automated and this reduces the time duration in which the user receives the passport.

1.2   System Interfaces

The PAS will use a relational database as backend for data storage. The client system should be able to share the data available in the database through the network connection.

1.2.1 User Interfaces

The PAS will provide an easy to use GUI as part of the working environment for the applicant and the passport officer to interact with the system.

1.2.2 Hardware Interfaces

A scanner is used to scan and upload the documents needed for verification.

1.2.3 Software Interfaces

The System uses ODBC drive version 6.0 to connect and control the database.

1.2.4 Communication Interfaces

LAN is used for communication among the client and server system.

1.2.5 Memory Constraints

A minimum of 64MB RAM is needed for the client system.

1.2.6 Operations

The applicant is required to fill and submit the application form and also scan and upload documents needed for the verification process.

The police must verify the details forwarded by the system and submit the verification report to the passport officer.

The passport officer must verify and approve the dispatch of passport for the applicants based on the verification report submitted by the police. He must also update the status of the application in each stage of the process.

1.3 Product Functions

- Secure registration of information by the applicants

- Display of passport application status

- SMS and e-mail updates to the applicants from the passport office

- Passport officer can generate reports from the information and add eligible application to the database

1.4 User Characteristics

Applicant – person who applies for the passport and submits information. He need not be a person with special skills and training. He is the average common man.

Passport Officer – person with the privilege to update the application status, approve the issue of passport and access the applicant information. He should have the skills and necessary training to manage the database and the system.

Police – person who verifies the details on receiving intimation from the passport officer. He should have basic computer knowledge to communicate via the PAS to submit the verification report.

1.5   Constraints

•   The applicant requires a computer with a scanner to upload documents for verification

•   Security is of much importance as there is always a chance of intrusion in the web world

•   Should support many users simultaneously

•   Must display appropriate error messages while filling the application form

1.6   Assumptions and Dependencies

If the applicant is under 18 years of age, the details of the parents passport information can be used to obtain the passport.

2.   Specific Requirements

2.1   Functional Requirements

2.1.1 Apply

Input: The Applicant fills in the application form available in the online interface giving the personal details and family information, and submits the application form.

Process: The details furnished by the applicant are stored in the database

Output: The database is updated with the new applicant details and appropriate message is sent to the applicant

2.1.2 Check Status

Input: The applicant enters the application number and login password

Process: The applicant password is verified and if correct, the database table containing the status information is searched with the application number provided by the user.

Output: The status message from the table is displayed for the applicant on the screen

2.1.3 Renewal

Input: The passport holder gives the passport number, passport holder's name and the expiry date for the validity.

Process: The given details are verified in reference with the existing information in the database. If found to be valid, the passport is renewed and the database updated.

Output: The renewed passport is dispatched to the user.

2.1.4 Update Status

Input: The passport officer gives the application number and the status for that application

Process: The database is updated with the new status message

Output: The updated database and the message to the applicant

2.1.5 Verification

Input: The details furnished by the applicant in the application form

Process: The details are cross checked with information in already existing databases

Output: The verification report

2.1.6 Online Payment

Input: The account details of the applicant

Process: The service of an external module provided by the bank is used to process the payment.

Output: The updated status and message to the applicant

2.2 Performance Requirements

The system should have a very short response time while displaying forms and messages.

As the system handles personal information and payment details, it should ensure privacy

to avoid malpractices.

The system should recover from crashes without any serious loss of data and should always maintain a backup of important information.

2.3   Design Constraints

The user interface should be an easy to use GUI that contains forms with hints to fill in the form in correct format and display error messages when not in required format.

The database should be accessible only to the passport officer.

The system should easily adapt to future changes and hence must be modular.

2.4   Software System Attributes

2.4.1 Reliability

To make the PAS system reliable, we must ensure that duplication is avoided

2.4.2 Availability

The system should be available to the applicant to check his status at any stage of the process, once it has been submitted. It must support more than one user at a time.

2.4.3 Security

•   To avoid unauthorized access, the applicant, passport officer and police must be given unique login and password protected

•   The police should be able to access the information only when notified by the passport officer through the system

•   All the documents uploaded by the applicant should be accessible only to the system administrator

•   A log of all user logins to the system must e maintained

2.4.4 Maintainability

• The PAS system should be frequently updated with any changes that may have occurred in the rules or application interface.

• For easy updation and maintenance, the system should be modular and the user interface simple.

2.4.5 Portability

The PAS system should be supported by any operating system and should occupy very less memory space.

2.5 Logical Database Requirements

Several tables are used in the database to store various information.

They are:

Register – used to store the details of users registered with the system. It contains the fields: Name, Date of Birth, Username, and Password.

Personal – used to store the details filled in by the applicant in the application form. It contains the fields: Name, Date of Birth, Sex, Address, City, State, Qualification, Profession, Mother's name, Father's Name, Marital status, and Spouse's Name.

Report - contains the verification reports submitted by the police for the reference of the passport officer. It contains the field: Application number, Recommendation.

Renewal Requests – contains the information regarding the renewal requests submitted by passport holders. It contains: Passport number, Passport holder's name and Expiry date.

Status - contains the application status. It contains the fields: Application number, Status and Passport number (if status is approved).