OOMD Lab 2022-23

Passport Automation System

Problem Statement

Passport automation systems streamline the process of passport issuance and management by using advanced technology to manage applications, track progress, and generate passports. Passport management involves the administration of passport-related processes, including application processing, verification, data entry, and record keeping. The benefits of passport automation systems and passport management include speed, accuracy, security, and convenience.

Introduction

* Purpose:

The purpose of this document is to provide a detailed description of the requirements for the Passport Automation System. This system will be used to automate the process of passport issuance and management, enabling faster and more efficient processing of passport applications.

* Scope of this document

The core of the system is to get the online registration form (with details such as name, address etc.,) filled by the applicant whose testament is verified for its genuineness by the Passport Automation System with respect to the already existing information in the database. It adopts a comprehensive approach to minimize the manual work and schedule resources, time in a cogent manner.

* Overview

The Passport Authentication System provides an online interface to the user where they can fill in their personal details and submit the necessary documents.

General Description:

A passport automation system is a software that helps to issue passports to applicants in a fast and efficient way. It allows the applicants to fill in their personal details and submit their documents online. It also verifies the authenticity of the information and documents with the existing database. It communicates with the passport authority and the local police for approval and verification. It notifies the applicants about the status of their application and the date of document verification.

Functional Requirements:

* Passport Information: The system should provide an online interface to the user where they can fill in their personal details and submit the necessary documents (may be by scanning).
* The system should allow the user to apply for a new passport, renew an existing passport, or change any details in their passport.
* The system should allow the user to pay the required fees for their passport application through online mode or offline mode.
* The system should authenticate the user by using their username and password or by scanning their barcode.

Interface Requirements

* User Interface
  + UI should be simple, intuitive, responsive and consistent
  + Interface should support different languages and devices as needed
  + UI should display availability and location of books in the library
* Hardware Interface:
  + The system should be compatible with multiple operating systems such as Windows, Linux etc
  + The system should be reliable and secure when communicating with hardware devices
  + The system should use QR codes to scan passports, and to facilitate payments
* Software Interface:
  + A working OS
  + Front-end framework like React/Angular/Vue
  + RDBMS like MySQL, PostgreSQL etc
  + Containers and orchestration services like Kubernetes

Performance Requirements

* The number of pages should be minimized for the user’s convenience
* Verifying passports should be a very swift process
* There should be a procedure for when there is loss of data due to failure of storage device or similar reason.

Design Constraints

* Working with the constraints set by the government
* Respect industry standards and follow best practices of software development

Non-Functional Requirements

* Performance: The system should be fast and accurate. It should handle expected and unexpected errors. It should be able to handle large amounts of data.
* Security: The system should protect the data from unauthorized access and modification. It should use encryption and authentication techniques to ensure data security.
* Scalability: The system should be able to handle an increasing number of users and applications without degrading the performance or functionality.