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Automated Visa Dispensation Application System to Maintain a Repository of Information about Visa Applicants

M. Saravanan[1], R. Vadivel[2*]

[1]Department of Information Technology, Bharathiar University, Tamil Nadu India
[2]Department of Information Technology, Bharathiar University, India

[*]*Corresponding Author: vlr_vadivel@yahoo.co.in*

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***Abstract*—** Project "Online Visa Processing System" is an automated program. It describes the process of applying for a visa. There are many types of visas granted by the government such as H1-visa, Dependent visa. Obtaining a Visa, issuing a Visa is a very meaningful decision, and it is not a contestant. Each visa officer has a list of requirements for which an applicant is applying for a visa. If met, the applicant issues a visa. Otherwise, the applicant does not. It is how these requirements are met that make the visa decision look good. In this paper the proposed system is a web-based system, using one that can store all information in an efficient and efficient way. The system allows storing aggregated data that has the properties to insert, edit and delete data as needed. The program is useful for the organization's Human Resources department to track staff details and their visits abroad. The program is proposed to consist of the following modules: Study Director, Visa Performance Module, Onsite Communication Module and Reporting Module.

Keywords—Visa Preparation, Administrative Management System, Decision Making, Web Use, Graphical User Interface.

I. INTRODUCTION

The motive of this paper is to develop an automated visa dispensation application system to maintain a repository of Information about visa applicants. To provide flexibility for users, social networks have been developed that are available through the browser. Advanced GUISs are categorized as a user interface for control and active or virtual user interface the user interface 'focuses on the consistent information available, which is part of Functions of an organization that also require the proper verification of data collection [1]. These areas assist managers with all exchange states such as Data Entry, Data Removal and Date Update and great data search capabilities. The 'operating system or standard user interface' assists the end-users of the program in processing existing information and required services. The user interface is also useful for ordinary users in managing their information in a customized manner.

II. RELATED WORK

A systematic system for the collection, analysis, organization, storage and communication of information is a form of information [2]. Information systems focus to support management, decision making and operations. According to Wikipedia (the free encyclopedia), the 'Internet Information System (IS) is a man-made system and computers that process or interpret information' [3]. This program assists with the processing of procedures and adjusts the date of interview for visa applications. The systems use methods, processes and machine readable steps to convert document fields into a data element that facilitates the sending, editing, decision-making and management that involves accepting a quantity of a text field extracted or inserted into a source [4]. There are rules related to the document type and are available or set, and used to process the text field for the specified job description and export. The role of Human Resources (HR) technology has changed over time from one highly regulated to one that is known as highly strategic and critical to the overall success of an organization. The Computer has served as an aid in decision-making in recent years, due to its rapid efficiency, accuracy, reliability, cost and safety, among others. In addition, awareness has become available to people as it relates to the use of computers in planning workplaces for business to avoid being entangled in carrying out their duties as the endless queue it is seen at the office of their various agents and stakeholders [5]. Organizations have adopted the use of various systems to help simplify their operations such as Management Information System (MIS), scheduling system (SS), Transaction Processing System (TPS), processing System (TS) and System Support Decision (DSS) in their plans performing other processes have had significant benefits [6]. All thanks to the presence of the Internet. According to Uzoka in Hampo (2011) [7], "Decisions are largely based on principles and experiences. Recently, efforts were made to develop intelligence in a computer system, where a computer can be used to process large amounts of structured and informal decision-making information." An information system can be defined as a continuous and efficient structure of hardware, software, people and processes for collecting, filtering, analyzing,

and disseminating relevant, timely and accurate information for use by recipients to supplement better decision-making [8]. The information system provides quantitative data and information to help recipients make better decisions. The information released from these programs goes a long way in meeting the need of the people in the organization provided by those outside the organization. More recently, information systems have been developed to provide data to support decision-making [9]. This application is known as the Management Information System (MIS). The MIS management information system is an official information network that uses computers to provide managers with the information needed for decision-making by adopting the basic MIS objectives to obtain relevant information from the right manager at the right time. "(Apanapudor, 2006) [10]. Unlike a data processing system (be it mechanical, electrical or biological) that takes information in one form and processes (converts) it into another, this process, the information processing process provides information about the processing that a visa application is currently using [11]. Apart from providing details on the processing of a single visa application, it also prepares the date for interviewing visas once the visa application webpage has been filed online. This program is also a form of action plan. Transactions in this sense are not monetary but a transaction can be seen as a business event with relevant internal and external characteristics [12].

III. METHODOLOGY

The process of using any organization lies in the decision-making and best practice of those in the organization. Therefore, a decision that involves planning activities; and management are the most important factors in any success or failure of a business. Issues associated with a visa application (decision making and work (interview) planning) are mainly as follows:

- Higher costs inclusive of travel and transportation costs
- Confidentiality
- Stress both the applicant and the interviewer
- Unnecessary delays in terms of preparation and proofreading
- Unnecessary robbery from the nearest abusers and agents
- Although it is not popular with all agents, bribery and deception in particular whose foreign currency is nothing more than a representative state.
- Lack of skills between the uneducated resources that claim to be professional and so on. This can be due to the particular emotional humility, overriding anger

The purpose of the study is to develop a computerized visa information system. The way is as follows: -

- Create a new user interface for the program.
- Create a module that will automatically schedule days for interviewing visa applicants.
- Create a module that will apply for visa applicants.

Create a module that can generate an agency activity report. Preliminary investigations evaluate the feasibility of a project; chances are the system will be useful to the organization. The main purpose of the existing research is the potential to test the technical, Functional and economic potential of adding new modules and replacing the old operating system. All programs are possible when they are provided with unlimited resources and unlimited time. There are features in the possible research part of the original study:

- Technical failure
- Operational efficiency
- Economic Failure

After careful analysis the system is identified to have the following modules:

- Administrator Module
- Visa Processing Module
- Onsite Communication Module
- Reporting Module

a. Administrator Module: HR manager will be the manager. The role of HR manager is to oversee HR managers and to authorize and certify you. HR manager maintains all HR managers' information.

b. Visa Processing Module: This module handles all visa related information, documents submitted, employee details, passport details, past visits and details regarding details of their previous visit. This information will be submitted by HR Executive.

c. Onsite Communication Module: Applicants' details, such as visa issue date, departure date, return date, and details of the activities below are stored in this module. This will be posted by the HR Executive. Additional employee progress such as project name, work time, work environment and so on, is posted by the Employer himself.

d. Reporting Module: This Module handles reports required by the Manager such as Visa Status Report, Onsite employee details etc.

System design is a process or technique for describing the design, components, modules, assembly area, and program data to satisfy specific requirements [13]. One can see it a the application of ideological systems to product development. There is an overlap and overlap between the direction of systems analysis, systems design and systems engineering. Data and data are important and should not be something played with or insecure. The project has developed ways to protect information and data. Also, a time frame for the preparation of the interview has been created so that the necessary information is provided. The process is shown in figure 1.

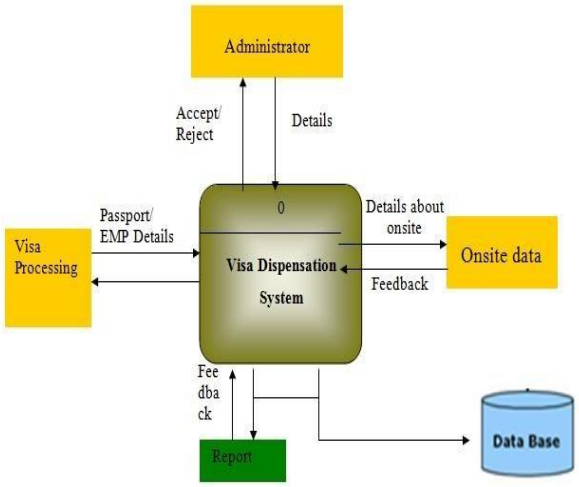

Figure 1. Data Flow Diagram for Visa Dispensation System

IV. PERFORMANCE EVALUATION

Performance is measured based on the performance provided by the app. Demand specificity plays an important role in program analysis. Only if the necessary definitions are properly provided, it is possible to design the system, which will fit into the required space. It is very relaxing for existing system users to provide specific information because they are the last users of the system. This is because the requirements need to be known during the initial phases in order for the system to be optimized accordingly. It is very difficult to modify a system once it is designed and on the other hand the design of the system, which does not suit the user's needs, does not work. Specification of the need for any program can be stated further as given below:

- The system must be able to communicate with the existing system
- The system must be accurate
- The system should be better than the existing system

The existing system relies entirely on the user to perform all the tasks.

A. Software requirements

Operating System : Windows
Technology : Java and J2EE
Web Technologies : HTML, JavaScript,
IDE : My Eclipse
Web Server : Tomcat
Java Version : J2SDK1.5

B. Hardware requirements

Hardware : Pentium
RAM : 1GB

C. Results and discussion

The Visa Processing Information System is compared with manual data entry process. The performance of the Visa Processing System is measured by the metrics such as time consumption, error rate and data retrieval speed.

a. Time Consumption

Time consumption is defined as the total time taken for completing the whole process. Table 1 shows the total time consumed by visa processing system and manual process for entering data. The graphical representation of the time consumption is showed in figure 2. From this it is well understood that, automated visa processing system performs well with improvement of 97%.

Table 1. Time Consumption

Visa Processing System		**Manual Entry**	
File Size (words)	*Time (minutes)*	*File Size (words)*	*Time (min)*
50	1	50	3
80	2	80	8
150	2.5	150	10
200	3.5	200	13
250	5	250	15

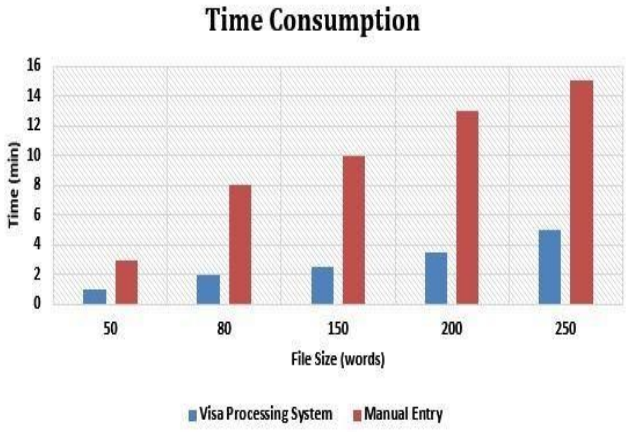

Figure 2. Graph for Time consumption

b. Error Rate Analysis

Error rate is the difference between the expected value and the achieved value. Table 2 depicts the error rate between visa processing system and manual system. The table shows that visa processing system gradually reduces the error rate. Figure 3 shows the graphical representation of error rate. It is understood that the proposed method outperforms with improvement of 93% and reduces the error rate.

Table 2. Error Rate

Visa Processing System		**Manual Entry**	
File Size (words)	*Error Rate (%)*	*File Size (words)*	*Error Rate (%)*
50	9.1	50	25.6
80	7.3	80	29.3
150	7.1	150	31.4
200	6.5	200	36.8
250	5.3	250	39.1

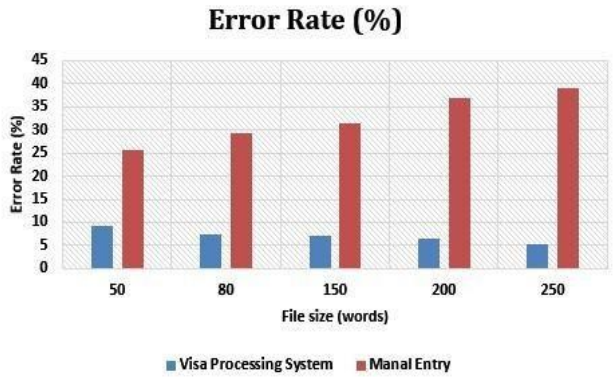

Figure 3. Graph for Error Rate

c. Data Retrieval Speed

Data Retrieval Speed is defined as the time taken by the system to fetch the data from the database and deliver on the screen. In table 3 the data retrieval speed between visa processing system and manual system. Due to the digitized processing the data recovery speed is increased in visa processing system. Figure 4 shows the graphical representation of data retrieval speed between visa processing system and manual system. It is clear that the proposed method shows 91% of better data retrieval speed.

Table 3. Data Retrieval Speed

Visa Processing System		**Manual Entry**	
Time (minutes)	*Number of Records*	*Time (minutes)*	*Number of Records*
15	55	15	10
30	110	30	15
45	220	45	25
60	280	60	35
90	360	90	40

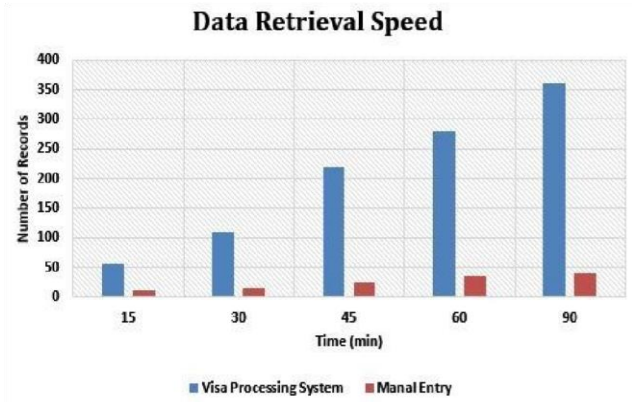

Figure 4. Graph for Data Retrieval Rate

b. Database Record Storage

It is the number of records newly added to the database within a specific time period. Table 4 describes the details of database record storage of visa processing system and manual method. Figure 5 demonstrates the graph of database record storage. It is well understood that the proposed method performs well about 90%.

Table 4. Database Record Storage

Visa Processing System		**Manual Entry**	
Days	*Number of Records*	*Days*	*Number of Records*
10	600	10	140
50	1100	50	300
70	1500	70	460
100	2300	100	580
150	3000	150	1200

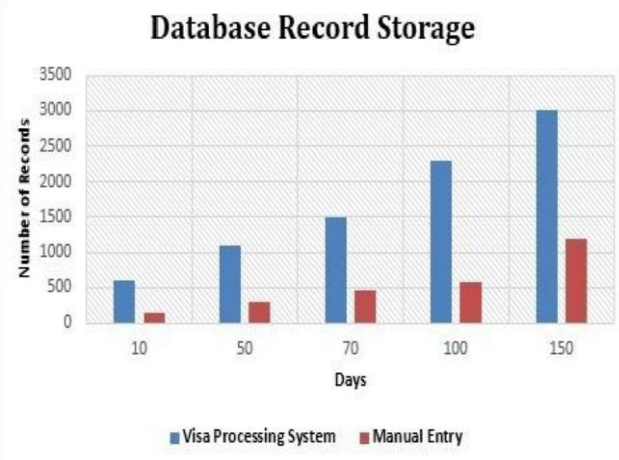

Figure 5. Graph for Database Record Storage

V. CONCLUSION AND FUTURE SCOPE

Visa Processing Information is a web-based system for visa-based tracking of a visa company that offers customized solutions to meet company / customer requirements. This software package has been successfully calculated and tested for “test cases”. It's easy to use, and has the necessary, user-friendly options to perform the tasks you want. The software was developed using Java as a frontend and SQL as an endpoint in the Windows environment. In future development each application has its own set of requirements and requirements. The project covered almost all the requirements. Additional requirements and improvements can be made easier as coding is more structured or modular in nature. Replacing existing modules or adding new modules may entail upgrading. Other enhancements with additional features can be made to the application, to make the website function more attractive and useful than the current one. In the future, the system can convert this web app into a mobile app so it can function in the current environment. The app can be upgraded through its storage with the help of a cloud platform. Therefore a very large amount of data can be stored. Other research is an adjunct to this study in order to apply it to the operation and design of the system. The inclusion of many modules and feature such as biometric implementation should be included in future research. The proposed system performs better in the following parameters such as time consumption, error rate, data retrieval speed and database record storage. The proposed method is improved by 96 % performance.

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AUTHORS PROFILE

M. Saravanan received Bachelors Degree in Information technology in the year 2018 from Virudhunagar Hindu Nadar Senthilkumara Nadar's College, Virudunagar, Tamil Nadu, affiliated to Madurai Kamaraj University. He is currently pursuing a Masters Degree in Information Technology from 2018 to 2020, at Bharathiar University, Coimbatore, Tamil Nadu. His area of interest is Robotics and Virtual computing

R. Vadivel is an Assistant Professor in the Department of Information Technology, Bharathiar University, Tamil Nadu, India. He received his Ph.D degree in Computer Science from Manonmaniam Sundaranar University in the year 2013. He obtained his Diploma in Electronics and Communication Engineering from State Board of Technical Education in the year 1999, B.E., Degree in Computer Science and Engineering from Periyar University in the year 2002, M.E., degree in Computer Science and Engineering from Annamalai University in the year 2007. He had published over 40 journals papers and over 30 conferences papers both at National and International level. His areas of interest include Computer Networks, Network Security, Information Security, etc.

