

CSE 2101 ASIGNMENT 2

Software requirement specification

GROUP MEMBERS

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Introduction

The main reason for developing this software system is to keep record of the people that are deceased on the voters list, to make sure nothing is rigged. Between the month of December 2015 and march 2016 GECOM released a list of five civilians that were deceased. They later found out from one of the list of civilians that were said to be deceased, were not even on the registered Elector list. This is another reason why we need to develop a software system for this. The software system should take records and separate the civilians that are alive from the ones that are deceased once a month. GECOM get their information on deceased people from GRO, this Software System will make it easier to check the deceased people, get accurate and valid information and remove all deceased persons from the list without any misinformation.

Overall Description

It should be known that GECOM, since 1991, is headed by a chairman and six Commissioners. GECOM is supported by core staff in its Secretariat. The work of the Commission is supplemented in its election's preparation and administration by thousands of temporary staff. Although it was established decades ago, it is known that GECOM provides unique and services and products which cannot be forged anywhere else, which would therefore be labeled as a New self-contained product for example; Identification cards. (ID)

GECOM Functions

GECOM performs a variety of functions for the benefit of Guyana, it is known that many of the GECOM head executives are Government officials, GECOM is constitutionally obliged to act with impartiality and fairness in the execution of its duties.

- Issue Identification cards to Guyanese citizens that are 18 years of age and older.
- Responsible for every single vote to pass through the election system and announcing the date of the new president of the country of Guyana.
- The Guyana Elections Commission has an open policy to the media. This includes the hosting of briefings for the print, electronic and broadcast media as may be necessary outside of election mode, and regular periodic briefings during election periods.
- GECOM established its own Media Monitoring Unit (MMU) which provided the media with regular reports in the run up to polling day for the 2001 General and Regional Elections.
- GECOM sets policy for voter registration, maintenance of the voters' list and the administration of all national, regional and local government elections within the legislative framework, whilst the Permanent Elections Secretariat implements the policy under the supervision of the Chief Election Officer (CEO). The Secretariat also performs the tasks of the National Registration Centre.

User Classes and their characteristics

Fortunately, everyone would have to get an identification card at some point of their life, it doesn't really come down to person's lifestyle classes since it may be needed for our everyday life. Although when it comes to voting different classes in Guyana may have different views on politics but nevertheless, it may depend whether their family has political beliefs and may force their ideals onto the young adults in their family, but at the end of the day it is very much free to obtain services from GECOM as it's just not a private company but a Government one.

Design and Implementation Constraints

- Unrealistic Or Mismatched Timelines

A very common issue in software development is the timeline. It is important to be realistic when setting a timeline. The inability to meet the designated for a software development project can be disastrous. This can cause launch delays which can hurt the team and their employer.

- Collaborative Communication

Communication is a major issue in a group project especially in the software engineering community. Effective communication is important and if this is not done properly then it can lead to delay the launch of the program or a program with faulty codes or other issues.

- Security

With the increase of security breaches web applications must be fully secured and that's the duty of the software team. This is to protect sensitive data from being leaked or altered for the benefit of another organization.

Assumptions and Dependencies

- Duplication Of Testing Environments

One software development challenge relating to the environment is duplication of testing environments. This issue arises when the software developers are not using the same software environment to develop, test and run their software. This is can caused by a number of reasons such as lack of communication or poor leadership. This can cause a number of issues with the software such as testing errors, compatibility issues and incorrect assumptions.

- Lack of Resources for the Software Development Process

Lack of budget and resources is a common issue that arises during development. This includes increased complexity in the software which would require more time and money, affecting the timeline and the budget. In addition to these constraints, developers may be faced with a lack of computers or appropriate computers and technology to for the project.

- Strict Time Constrains

One common issue that arises during the development of a software is the strict time constrain. At the beginning of the project the deadline is agreed upon which leads to a lot of pressure and frustration. During development as issues arises this affects the timeline set by developers.

System Features

The main function for our system is to remove persons that have died from the voters list, this action would be done every month so that the electoral process would be less time consuming. The system will provide the necessary information on all persons who are eligible to vote, this information will be arranged in alphabetical order and there will also be features whereby the user could further filter out information so that they could easily find what they are looking for faster. To avoid any information being tampered with or deleted only a few persons with a unique ID number will have access to the system, a log will also be updated automatically every time someone logs in and out the system, the time they logged in and the time they logged will be provided for other persons who also have access to the system to see, the user/s can will also be able to see what was last modified or updated inside the system. The system will also be used to help with the issuing of ID cards and to count votes.

Performance Requirements

(Performance Requirements, n.d.) states that Performance requirements specify how effectively a software system completes a task under particular circumstances. Knowing this we have established multiple performance requirements. Those are: Response Time, Platform, Workload and Scalability. As it relates to response time, the system should be able to load new pages in less than 5 seconds and open different sections of the interface in 3 seconds. The platforms to be used in this project includes: SQL, cloud computing and php. The software must support 1000 employees and at least 2000 new names every day. The system must be able to accommodate at least 600,000 people and their information, as well as fresh data entering the database daily.

Safety requirements

According to (Safety Requirements, n.d.) The safety qualities (qualitative or quantitative) of a system and its operation (including operational procedures) essential to achieve regulatory or organizational safety objectives are referred to as safety requirements. When this software is released, it is expected to have multiple requirements when it comes to possible loss, damage or harm that could result from the use of the product. Those being:

- The system should cease all operations if the admin or head of the organization chooses to, meaning there should be a kill switch.
- In the event of a security breach, backups must be sent to the cloud.
- There should be a virus detection system working in the background
- The system should keep track of the number of employees logged in and their names at all times.
- If a fire breaks out, the system should be sent to the backups.

Security Requirements

Functional security requirements include: The system should only allow new employees after confirmation from the head of department. The employees should input their badge number in order to interact with the system, this is a form of identity authentication. Non-functional security requirements are: An employee will be locked out of their account if they give the wrong badge number 3 times. Unauthorized access to data must be flagged and sent to the security team.

Software Quality Attributes

The features of the software application system that are under control and fulfill the requirements of the software application to be qualified for being of high quality are referred to as software quality attributes (Pedamkar, 2022). Software Quality Attributes in this project include: Availability, Portability, Performance, Integrity, Recoverability and Maintainability. The time the program will be accessible to the client should be known to the developers. Due of how big it expands; it would not be a portable system. As stated in the performance requirements, the system should be able to load new pages in less than 5 seconds and open different sections of the interface in 3 seconds. When it comes to integrity of data, the software has measures in place to prevent unauthorized access, we can see this in the security requirements. Backups are included to make the recovery process easier. To make changes an employee must have admin access, any major update will require the application to be temporarily inactive.

Business Rules

Business rules are the principles, procedures, or standards that your organization uses to run operations and direct its employees (Developer, 2022). With this in mind we have developed some business rules, they are as follows: The head of department allows new employees to enter the system and they have access to the kill switch. All employees have access to the first and second phase of the application interface. Admins have access to all phases of the interface. The system should block access to persons trying to access admin features if they're not an admin. If access to specific parts of the system is requested prompt to security team for verification. When the kill switch is activated, all data must be sent to backups. If tampering is detected, inform security team and Head of Department.

References

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I NEWS GUYANA (2018)[PPP says GECOM's list of dead persons who were never registered inaccurate | INews Guyana](#)