Customizable Mailbox Filtering System with Windows Presentation Foundation (WPF) Technology

Priyanka G[1], Dr. Yuvaraju B N[2]

[1]Student, MTech-Information Technology, Department of CS&E, The National Institute of Engineering, Mysuru, Karnataka, India

[2]Professor, Department of CS&E, The National Institute of Engineering, Mysuru, Karnataka, India

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Abstract - *With the increase in the unwanted mails in the mailbox, there are high chances of users miss out attending the priority mails on time. Different users have different priorities on the mails which has created a need for customizable mail filtering system. Windows Presentation Foundation (WPF) is a graphical user interface framework used to build Windows client applications that run on Windows operating system. The WPF development platform supports application development features including resources, controls, graphics, layout, data binding, documents and security. The filtering and updating mails is performed on individuals desktop which is the reason behind to choose the WPF framework as it provides high quality rich user interfaces that stand out amongst its competitors and is cost effective.*

Key Words: WPF - Windows Presentation Foundation, XMAL - eXtensible Application Markup Language, IMAP - Internet Mail Access Protocol.

1. Introduction

In Recent days E-mail addresses have become the formal contacts to contact a user. Denning states that "Every mailbox is accessible to any sender" [1] which leads to electronic junk. Every day the individual might get hundreds of mails which includes important mails and also unwanted mails.

Finding the priority mails among the hundreds of mails and to act upon it accordingly have become a huge challenge for an individual and also it is a time consuming process and have high risk of missing out the important mails. The solution to combat this problem is the customizable mailbox filtering system. Thus the objective is to develop a customizable mailbox filtering system on individual desktop having the following characteristics [2].

- It is an independent system as filtering and updating is done in individuals desktop and does not need any supporting system. This reduces the communication cost between systems.
- Mailbox filtering system take care of user's data privacy as it does not store the retrieved mails in any third party storage.
- This system can be personalized as required by the user as the different user have different perspective on the received mails.

- The mailbox filtering system updates as and when the new mails arrives.
- The mailbox system is simple and user friendly.

Since filtering is done on individual's system user need not have to pay for any third party services and need not have to worry about the privacy.

2. Introduction to Windows Presentation Foundation

WPF is a Microsoft technology used to create Windows graphical user interface, animated graphics, windows forms. WPF is a part of .NET Framework 3.0 as the Windows library to build Windows client apps .Its vector based rendering engine takes the advantage of hardware acceleration of modern graphic cards which in turn makes the User interface faster, scalable and resolution independent [3]. WPF uses XMAL as a frontend language and C# as the backend language.

XMAL stands for eXtensible Application Markup Language using which one need not have to program to create UI and is similar to HTML. WPF forms are built using interactive designer to drag and drop of elements and also its properties can be customized. The XMAL code specifies the controls objects and their properties that make the UI. XMAL is converted to instances of object by XMAL compiler when the program runs [4].

3. Problem Definition

In most of the organization, emails play a key role in day to day job. Professionals are subjected to manage a large volume of mails every day. Often, it is a tedious and difficult task to identify and segregate the important and priority mails from the whole set of emails. In this, there are high chances that they might miss attending a priority email on time.
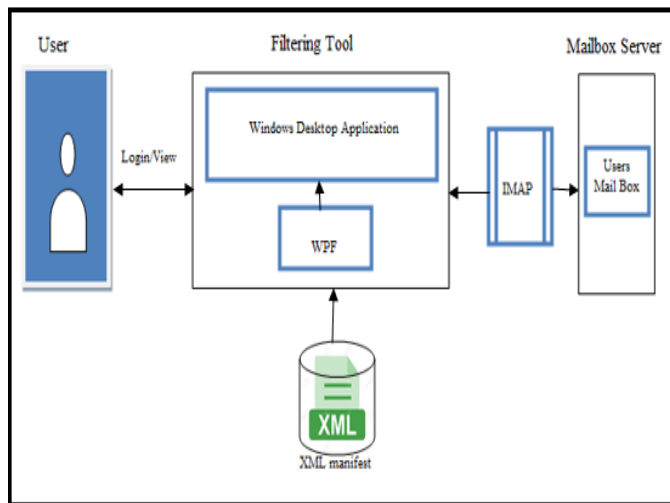
4. Mailbox Filtering system architecture

Fig 1: Filtering system architecture

User:

- User will be able to register, login to the mailbox filtering system by using valid   e-mail address.

- User can view emails classified based on the custom rules on the graphical dashboard.

- User can also take actions on those mailbox messages via the detailed view screen.

Mailbox Filtering Tool:

- It is a windows desktop application which allows users to customize rules and based on that emails that are pulled from mail box server with the help of IMAP.

- Filtering rules is applied on the retrieved email and the resultant filtered mails is shown on the dashboard in the form of graph.

XML based Data Source:

- XML file is used to store users credential's and rules information.

Mailbox Server:

- Mailbox server role contains transport services for routing mail, mailbox databases, and Client access services to accept client connections.
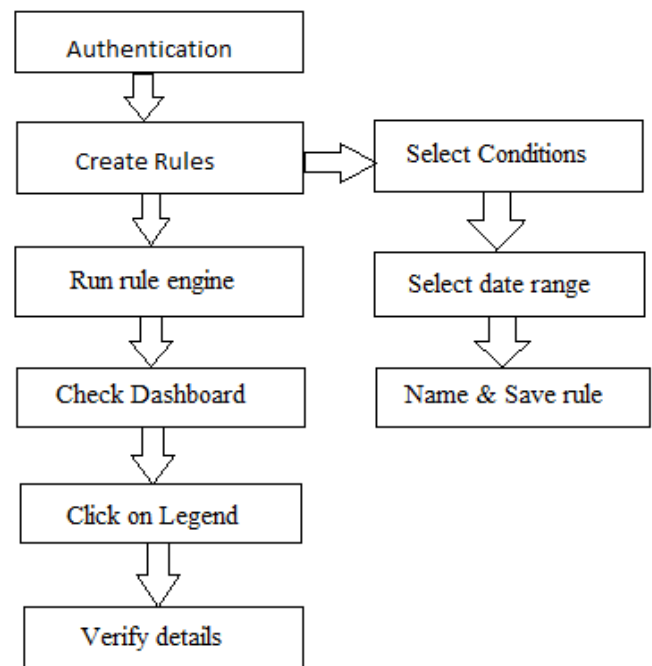
5. Mailbox filtering flow

Fig 2: Filtering system flow.

Authentication:

- Authenticated users can login to the application and can have access to the application.

Create rules:

- The filtering system will be given with default rules.

- The default rules are based on the priority and aging.

- The rules can be customized based on individual's requirement by selecting on the conditions and date range.

- The rules can be edited, deleted and saved.

- Naming the rule as per individuals convenience is must.

Run rule engine:

- The created rules are then executed.

Check dashboard:

- The processed information is then displayed on the window in the form of graphical dashboard.

Click on Legend:

- On click of the legend, the corresponding high, medium or low priority emails are opened on the window.

Verify details:

- User can now see the categorized emails and can take required actions.

6. Conclusion

The Mailbox Filtering system, which is a desktop application retrieves the emails from Gmail server using IMAP and allows the users to create rules based on their priorities and using those rules the filtering tool filters emails as High, Medium and Low priority emails and their respective count is shown in the form of charts so that the user can click on the legend of the chart and view the corresponding mails, and can also call actions such as reply/forward. This tool being reliable, scalable, secure, user friendly and stand-alone windows desktop application, using this tool thereby helps the professionals not to miss out any important mails and manage them accordingly on time which also saves his/her valuable time.

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