User Interface Module:

This is for an accounting software sprint

Allow three types of users – administrator, manager, and regular user (accountant) to login to the system;

The administrator user should be able to create users and assign roles;

The administrator user should be able to update information about a system user;

The administrator user should be able to activate or deactivate each kind of user;

Each kind of user should be able to log in to the system once credentials are created in the system

The login username, picture, should be displayed clearly on the top right corner of the login page once they have successfully logged into the system;

The login page should have:

A text box to enter the username

A textbox to enter a password which will be hidden as the user keys in the password

A submit button

A forgot password button

A create new user button

A logo which will be displayed on all the pages of the application

The create a new user button will be used if the user is accessing the system for the first time. Clicking this button should display a user interface where the user will provide personal information such as first name, last name, address, DOB, and click submit to request access to the application. The administrator should receive email request and must approve or reject the request. If approved, an email should be sent to the user with a link to login to the system;

A button for forgot password. If this button is clicked, the system should prompt the user to enter email address and user id the person provided when his credentials were created in the system and ask security questions to allow him to supply new password;

Passwords must be a minimum of 8 characters, must start with a letter, must have a letter, a number and a special character, if this requirement is not satisfied, display at appropriate error message;

Password used in the past cannot be used when password is reset;

Password must be encrypted;

A maximum of three wrong password attempts should be allowed after which the user should be suspended;

All login information must be stored in database tables;

Three days before a password expires, the user should receive notification that the password is about to expire;

The administrator should have a report where he can view all users in the system without going straight to the tables;

The administrator should be about to suspend any user from a start date to expiry date such as if the person is on an extended leave;

The administrator should get a report of all expired passwords;

The administrator should be able to send email for any user from within the system;

A username should be made of the first name initial, the full last name, and a four digit (two-digit month and two-digit year) of when the account is created;

To implement the user interface module for your accounting software sprint, you can follow these steps:

Authentication System:

Implement a login page with text boxes for username and password.

Provide functionality for users to log in based on their credentials.

Allow three types of users: administrator, manager, and regular user.

Implement session management to keep users logged in.

User Management:

For the administrator:

Create functionality to create users and assign roles.

Allow updating user information.

Implement user activation and deactivation.

Implement user suspension for extended leave.

Provide reports for viewing all users and expired passwords.

Password Management:

Implement password strength validation.

Ensure passwords meet the required criteria.

Encrypt passwords before storing them in the database.

Enforce password history to prevent reuse of old passwords.

Implement password expiry notifications.

Allow users to reset passwords with security questions.

Implement a maximum number of wrong password attempts before suspending the user.

User Interface:

Display user information (username, picture) on the top right corner after successful login.

Include buttons for forgot password and create new user functionalities.

Design a user-friendly interface for creating new users, including personal information.

Send email notifications for new user requests and password resets.

Database Management:

Store user login information and details in database tables.

Ensure proper indexing for efficient retrieval of user data.

Set up database triggers for password expiry notifications and password history.

User Naming Convention:

Generate usernames based on the specified convention (first name initial, full last name, and creation date).

Email Integration:

Integrate an email service for sending notifications and approvals.

Allow administrators to send emails to users from within the system.

Logo Integration:

Display the logo on all pages of the application for branding purposes.

Security Measures:

Implement secure coding practices to prevent vulnerabilities such as SQL injection and XSS attacks.

Use HTTPS for secure communication between the client and server.

Implement role-based access control to restrict functionalities based on user roles.

By following these steps, you can create a robust user interface module for your accounting software sprint that meets the specified requirements.

User

Chart of Accounts Module

Administrator User:

Add, View, Edit, or Deactivate accounts. You can ask the administrator to select which service he wants before displaying the appropriate user interface where he can perform the functionality. When an account is added, you must store in the database at least the following required information using a user interface designed to allow entering or modifying the information:

Account name

Account number (must have correct starting values as discussed in class)

Account description

Normal side

Account category (e.g. asset)

Account subcategory (e.g. current assets)

Initial balance

Debit

Credit

Balance

Date/time account added

User id

Order (e.g cash can be 01)

Statement (e.g. IS (income statement), BS (balance sheet), RE (Retained Earnings statement)

Comment

Duplicate account numbers or names should not be allowed;

All monetary values should have two decimal spaces;

All monetary values must be formatted using commas when appropriate;

Account numbers should not allow decimal spaces or alphanumeric values;

Accounts with balance greater than zero cannot be deactivated;

View either individual accounts and their details or a report of all accounts found in the chart of accounts;

Search using either account number of account name to locate an account in the chart of accounts;

The name of the logged user must be shown on the top left corner of the page;

The logo of the software must display on each page;

Clicking each account in the chart of account should take you to the ledger of each account;

You should be able to filter the data in the chart of accounts page using various tokens such as by account name, number, category, subcategory, amount, etc.

A pop-up calendar should display at the top left corner of the page;

Buttons to other services provided in the software such as journalizing must be found at the top of each page;

An event log showing the before and after image of each record added, modified, or deactivated should be generated each time data changes by any of the users. The event logs must be kept on a table. The user id and the time and date of the user who made change to the data must be saved. Each event must have a unique auto generated ID.

Each of the pages in the application must have a consistent color and layout scheme;

Each button must have a built-in tool-tip providing information about the purpose of the control;

Each page must have a help button having information about the entire software organized by topic;

Manager user:

Can view accounts but can’t add, edit, or deactivate accounts, but can perform the rest of the services the administrator can perform;

Accountant user:

Can view accounts but can’t add, edit, or deactivate accounts, but can perform the rest of the services the administrator can perform;

3

Journalizing & Ledger Module

Administrator User:

Add, View, Edit, or Deactivate accounts (implemented in Sprint 2).

View event logs for each account in the chart of accounts. Event logs must show the before and after image of each account. If an account is added for the first time, there will be no before image. If an account name is modified, there must be a before and after account image including the user id of the person who made the change and the time and date of the change;

Be able to send email to manager or accountant user from the chart of accounts page.

Manager user:

Can create journal entries using only accounts found in the chart of accounts;

Can approve or reject journal entries prepared by accountant. If journal entry submitted is rejected, manager must enter reason in the comment field;

Once journal entry is approved, the entry must be reflected in the ledger for the account;

Must be able to view all journal entries submitted for approval with pending approval status;

Must be able to view all approved journal entries;

Must be able to view all rejected journal entries;

Must be able to filter journal entries displayed for pending, approved, and rejected categories by date;

Must be able to search a journal by account name, amount, or date;

View event logs for each account in the chart of accounts. Event logs must show the before and after image of each account. If an account is added for the first time, there will be no before image. If an account name is modified, there must be a before and after account image including the user id of the person who made the change and the time and date of the change;

Must be able to click an account name to go to the ledger of the account;

From the ledger page, must be able to click the post reference (PR) to go to the journal entry which created the account;

Clicking an account on the chart of accounts page should lead to the ledger page for the account where all entries can be viewed;

Each entry in the account ledger must have a clickable post reference column which will lead to the journal entry which created it;

The ledger page must show the date of the journal entry, a description column which is usually empty, a debit, a credit column, and a balance column. The balance after each transaction and posting must be accurate;

The ledger page must have filtering and search features. You need to allow filtering by date or date range, and be able to search by account name or amount;

Accountant user:

Can create journal entries using only accounts found in the chart of accounts;

Debits come before credits in each journal entry created;

Multiple debits and multiple credits must be possible for each journal entry recorded;

Must be able to attach source documents to each journal entry of type pdf, word, excel, csv, jpg, and png.

Can cancel or reset a journal entry before it is submitted if restarting is desired but once a journal entry is submitted the accountant cannot delete it;

Can prepare and submit journal entries;

Can view journal entries created by the manager or other accountants;

Can view the status of all journal entries submitted for approval with pending, approved, or rejected status;

Must be able to filter journal entries displayed for pending, approved, and rejected categories by date;

Must be able to search a journal by account name, amount, or date;

View event logs for each account in the chart of accounts. Event logs must show the before and after image of each account. If an account is added for the first time, there will be no before image. If an account name is modified, there must be a before and after account image including the user id of the person who made the change and the time and date of the change;

Must be able to click an account name to go to the ledger of the account;

Once journal entry is approved, the entry must be reflected in the ledger for the account;

From the ledger page, must be able to click the post reference (PR) to go to the journal entry which created the account;

Each transaction must have at least one debit and one credit;

Do not allow submitting of a transaction containing an error;

Must be able to send email to the manager or the administrator from the account page;

Total of debits in a journal entry must equal total of credits otherwise an appropriate error message must be displayed, and the user should be able to use the error message to correct the problem. Think of all the errors that can happen and come up with appropriate error messages.

Error messages must be housed in a database table;

Error messages must be displayed in red color;

Once root cause of error is corrected, error should go away;

Manager must get notification when journal entry is submitted for approval;

Clicking an account on the chart of accounts page should lead to the ledger page for the account where all entries can be viewed;

Each entry in the account ledger must have a clickable post reference column which will lead to the journal entry which created it;

The ledger page must show the date of the journal entry, a description column which is usually empty, a debit, a credit column, and a balance column. The balance after each transaction and posting must be accurate;

The ledger page must have filtering and search features. You need to allow filtering by date or date range, and be able to search by account name or amount;

4

Adjusting entries and financial Reports

Manager user:

Can generate, view, save, email, or print trial balance, income statement, balance sheet, and retained earnings statement for a particular date or a date range;

Can approve or reject adjusting journal entries prepared by accountant. If adjusting journal entry submitted is rejected, manager must enter reason in the comment field;

Once journal entry is approved, the entry must be reflected in the ledger for the account as well as in the financial statements;

Must be able to view all adjusting journal entries submitted for approval with pending approval status;

Must be able to view all approved adjusting journal entries;

Must be able to view all rejected adjusting journal entries;

Must be able to filter journal entries displayed for pending, approved, and rejected categories by date;

Must be able to search a journal by account name, amount, or date;

View event logs for each account in the chart of accounts.

Must be able to click an account name or account number to go to the ledger of the account;

From the ledger page, must be able to click the post reference (PR) to go to the journal entry which created the account;

Accountant user:

Can create adjusting journal entries using only accounts found in the chart of accounts;

Must be able to attach source documents to each journal entry of type pdf, word, excel, csv, jpg, and png.

Can cancel or reset a adjusting journal entry before it is submitted if restarting is desired but once an adjusting journal entry is submitted the accountant cannot delete it;

Can prepare and submit journal entries;

Can view journal entries created by the manager or other accountants;

Can view the status of all adjusting journal entries submitted for approval with pending, approved, or rejected status;

Must be able to filter journal entries displayed for pending, approved, and rejected categories by date;

Must be able to search a journal by account name, amount, or date;

View event logs for each account in the chart of accounts.

Must be able to click an account name or number to go to the ledger of the account;

Once journal entry is approved, the entry must be reflected in the ledger for the account as well as in the financial statements;

From the ledger page, must be able to click the post reference (PR) to go to the journal entry which created the account;

Each transaction must have at least one debit and one credit;

Do not allow submitting of a transaction containing an error;

Must be able to send email to the manager or the administrator from the account page;

Total of debits in a journal entry must equal total of credits otherwise an appropriate error message must be displayed, and the user should be able to use the error message to correct the problem.

Error messages must be housed in a database table;

Error messages must be displayed in red color;

Once root cause of error is corrected, error should go away;

Manager must get notification when adjusting journal entry is submitted for approval;

Clicking an account name or number on the chart of accounts page should lead to the ledger page for the account;

Each entry in the account ledger must have a clickable post reference column which will lead to the journal entry which created it;

The ledger page must show the date of the journal entry, a description column, a debit & a credit, and a balance column. The balance after each transaction and posting must be accurate;

The ledger page must have filtering and search features. You need to allow filtering by date or date range, and be able to search by account name or amount;

5

All users:

Can view the financial ratios and dashboard on the landing page for all ratios data is available in the solved problem once successfully logged into the application;

Menu buttons found on other pages must also be accessible on the landing page depending on what each type of user is typically allowed to access – administrator, manager, and accountant;

A section of the landing page can also be used to display important messages such as if there are journal entries waiting for approval, etc.

Dashboards must display using three color codes – green (good), yellow (borderline or warning range), and red (needs closer look.). Research normal ranges for the different kinds of ratios. I have already given you some examples in class.

The look and feel of the landing page must be consistent with all other pages found in the application.

To implement the Chart of Accounts, Journalizing & Ledger, and Adjusting Entries & Financial Reports modules for your accounting software sprint, you'll need to follow a structured approach. Here's a breakdown of the key functionalities and features to be implemented:

Chart of Accounts Module:

Create interfaces for adding, viewing, editing, and deactivating accounts.

Implement validations to prevent duplicate account numbers or names.

Store account information in the database with required fields.

Display logged-in user's name on the page.

Include software logo on each page.

Allow filtering and searching of accounts by various criteria.

Implement a consistent color and layout scheme across pages.

Provide tooltips for buttons.

Include a help button with information about the software.

Generate an event log for each record change, including user ID and timestamp.

Journalizing & Ledger Module:

Enable administrator and manager users to perform account management tasks.

Allow creation, viewing, editing, and deactivation of accounts.

Implement event logs for account changes.

Enable sending emails from the chart of accounts page.

Manager users can create journal entries using accounts from the chart of accounts.

Allow manager users to approve or reject journal entries prepared by accountants.

Update ledger entries based on approved journal entries.

Provide filtering and searching of journal entries by various criteria.

Enable attaching source documents to journal entries.

Implement error handling for incorrect transactions.

Notify manager when journal entries are submitted for approval.

Adjusting Entries & Financial Reports Module:

Allow manager users to generate, view, save, email, or print financial reports.

Enable approval or rejection of adjusting journal entries by manager users.

Reflect approved entries in the ledger and financial statements.

Provide filtering and searching of adjusting journal entries by various criteria.

Implement error handling for incorrect transactions.

Notify manager when adjusting journal entries are submitted for approval.

General Features:

Include landing page with financial ratios and dashboard.

Ensure menu buttons are accessible on the landing page based on user roles.

Display important messages on the landing page.

Use color codes (green, yellow, red) for dashboards based on predefined ranges.

Maintain consistent look and feel across all pages.

User Roles:

Administrator: Full access to account management, journalizing, ledger, and financial reports.

Manager: Limited account management capabilities, approval/rejection of journal entries, access to financial reports.

Accountant: Limited account management capabilities, creation and submission of journal entries, access to financial reports.

By implementing these modules and features, you can create a comprehensive accounting software solution that meets the specified requirements for user roles, account management, journalizing, ledger maintenance, financial reporting, and dashboard visualization.