CSC 393 ASSIGNMENT

CLOUD-BASED ACCOUNTING SYSTEM

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Part one

One of the potential cases of analysis and designing the software product aimed for the usage in software development domain is may be the development of the cloud-based accounting system for SMEs. The growing presence of the technology has also impacted how organizations operate their finance and as such, worth a look into the functionality of such systems. Extent of Cloud-based Accounting Software has numerous benefits such as access convenience, affordable, real-time processing, which make solution beneficial for SMEs most of the time have financial constraint and need solutions that can solve problems efficiently.

It also describes the broad activities that occur in a system of cloud-based accounting, including user access, input, transaction handling, report, and application interfaces. If user authentication is enforced, this RE ensures only the authorized personnel may access sensitive information such as financial information, therefore increasing security. Users are able to easily input invoices, expenses and other financial transactions through easy-to-use display interfaces. The three steps are important because they are the precursor to delivering reliable financial information. In transaction processing, entries are automatically classified and this helps to downgrade the possibility of involving human errors as well as being able to meet the standard set in accounting.

Furthermore, the reporting feature of cloud-based accounting systems is comprehensive to allow users to produced a variety of financial reports including, the profit and loss account, balance sheet and cash flow statement at the click of a button. They give information on the financial position of the business making it easier to make right choices. Furthermore, the synchronization of cloud accounting to business applications like the customer relationship management system and inventory management system provide better and more efficient business performance viewing or evaluation.

User experience is an important facet of cloud accounting applications since prior studies show that users have favorable attitudes towards the effectiveness of cloud accounting applications. Participants rated the satisfaction they got from the software as either good or excellent in a scale of 91.8% while 96.7% stated that the software was effective to address their accounting needs (Mauricette et al., 2022).

This exposes the need to spend significant effort in developing a friendly and easy-to-use front-end and to arrive at the specific needs of SME's and fitting the software to the needs and specifications of these clients. Additionally, the fact is that cloud systems can be updated frequently and smoothly, making users avail of the best options possible with features, as well as the new levels of security without overhauls and expenses on other levels.

When thinking about advanced software development methodologies these eight considerations should be taken with regards to cloud-based accounting systems. Choosing the right development methodology can greatly influence how the project will fare. Experience of the development team, namely, needs of the client, and tendencies in the sphere are also important for making such decision (Seniv, 2023). While specific software development paradigms can be appropriate for the task, other methodologies that walk alongside it may be more suitable to the development of cloud-based accounting software since they are rarely fixed and can be rapidly adapted based on user feedback and changing requirements such as the agile development methodologies. This flexibility is important given that the user needs and the available technology for serving them change over time.

Further, the incorporation of a recommender system to help greenhorn developers in designing accounting software improves the design process. These kinds of systems can also help give advice according to industry standards and the users' shortcomings making the process faster and the product better. Through the existing frameworks and languages, the developers see opportunities in adding features that uniquely serve SMEs' needs better, which will enable better, more efficient, and more friendly tools for accounting solutions.

In conclusion, the development of a cloud-based accounting system for SMEs is a prospect for improving the accountancy practices in the organisation. This means that such a system would offer considerable advantages to organisations by concentrating on the desirable attributes of the system, especially the usability aspects, good reporting capabilities, and the application of various advanced practices from the sphere of software development. Due to the constant advancements in cloud services and customers' expectations more effort is to be invested in the development and enhancement of this category enabling SMEs to benefit from the advances in the field and remain competitive in today's market.

Part two

The project mentioned in Part One is cloud-based accounting system for SMEs new product development. These include the following; Business finance is a significant concern that forms the core focal area that this system seeks to respond to following major issues that affect SMEs; The key ideas of system analysis, planning and monitoring of project activities will be incorporated in this project to ensure that its implementation provides its users with utility value and tangible benefit for the stakeholders.

i) The change that the project aims at addressing is the current state of affairs of Small and Medium Enterprises' accounting that are considered inefficient and inaccessible. A large number of SMBs continue to use manual systems, paper and pencil, or outdated systems that provide limited real-time information and are not well integrated with other processes. This means that there will be inefficiency resulting to errors, delayed financial reporting, and thus poor decision making. The project is aimed at moving to an accounting software in the cloud which will help to optimize the financial processes, increase the reliability of the data collected, and obtain timely information concerning the financial position of the company.

ii) The need that has been identified and which is likely to warrant attention is the emerging need for easy to use, affordable and effective accounting solutions for SMEs. With various industries transitioning to digital space, it has become specifically important to find accounting systems that could be accessed from anywhere, are user-friendly and do not necessarily always need support from the large corporations' information technology departments. Present approaches hardly implement these criterions, making users to develop some level of frustration through lack of proper tools to handle their financial matters. This project aims at fulfilling that gap by providing a solution that is custom made for the SMEs.

iii) The solution which we seek to achieve is a cloud-based accounting application that allows for adoption of user's authentications, complete trade transaction processing, report generation and modifications and complete integration with other business applications. It is paramount that this system should be created to be user friendly as much as possible. The solution will also be scalable thereby enabling the businesses to expand without toppling over the confines of the existing software. Lastly, the overall objective is to assist the SMEs to acquire the necessary instruments for efficient financial management and appropriate decisions making.

iv) The users of the accounting system are the SMEs of the country, software developers, project managers, financial advisors and to some extent investors or

funding bodies if there is any. All these stakeholders have some form of stake in outcome of the project. SMEs will gain direct benefit, users such as developers and project managers will be responsible for designing and installing the software. For instance, the main value of the project may be in its features that the financial advisors can recommend as most useful to the users, while the investors will be interested in whether the project is going to become financially productive and yield necessary income.

v) On the aspects of value, which the project will deliver to the stakeholders the value is multiple. The greatest amount of value is realized in terms of increased capacity of SMEs in financial management which enhances their decision making and overall organizational performance. One of the prime advantages of the software is the reduced time to perform the accounting activities that normally would seem to dominate the lives of business owners. From the side of the developers and project managers the project implies a deal chance to develop and come up with new product to satisfy one of the major market needs, which, in turn can bring monetary compensation and recognition. Such cloud accounting services will benefit Investors by highlighting the prospect of making profits and market since the sector is relatively young and advancing due to the growing adoption of technology by various companies.

vi) The realistic factors that may be involved or the frame that may volatile and impact on the project is the technological factors the regulatory factors and the factors of competition. Since technology is advancing very quickly, the software needs to be easily extendable, that is, be able to incorporate new features that may be released in the future. Further, the accounting regulations of the country could change and mean that new rules have to be added to the software to meet them. Competitive pressure is another essential aspect, primarily because this is not the only project of its kind and must offer something special, easier to use than the others, and known to potential users and consumers.

Some assumptions made for the project are that SMEs are ready to adopt cloud solutions and that they have the required internet connections for such systems. It is also assumed the target market has some prior knowledge in accounting thereby easing the adoption of the new software. In addition, the project supposes that the development team has all necessary skills and experience to provide the best result in the form of a developed and launched product, meeting all the requirements and restrictions in terms of time and money.

In conclusion, the development of a cloud-based accounting system for SMEs presents a significant opportunity to enhance financial management practices. By addressing the inefficiencies of traditional accounting methods, meeting the specific needs of SMEs, and delivering a user-friendly solution, this project aims to create substantial value for all stakeholders involved. The careful planning and monitoring of the project will be essential to navigate the various challenges and ensure its successful implementation.

Part three

To effectively gather requirements for the development of a cloud-based accounting system for small and medium-sized enterprises (SMEs), two primary techniques will be employed: surveys, and questionnaires. These techniques are useful especially in order to avoid any misunderstanding with stakeholders in producing the software requirements specification (SRS) document.

1. Interview Technique

Sample Interview Questions:

1. Controlling What particular accounting activities do you still perform manually or with some current software?

2. In your current accounting operations what do you consider are major hurdles that you need to overcome?

3. How frequently will you require access to your data, from where (Office? Home? Mobile)?

4. If you were designing an accounting system cloud-based, what do you believe are key components that should be included?

5. What steps do you now take to address data security and privacy in accounting?

6. Do you have any special connections with other tools, with CRM and inventory, for example?

7. Where do you see yourself financially when it comes to the accounting software, and what type of pricing plan best suits you, standalone or recurring?

8. How critical is the customer-support and the training when implementing a new software?

Objectives of the Interview:

To achieve this research goal, the targets of these interviews are twofold: (i) to assess the current accounting practices of SMEs, the problems they encounter from this process, and what they expect in a more advanced cloud-based solution. Secondary research methods can therefore only take the project team up to a certain level, beyond which, the actual users of the new system need to be consulted. The interviews will be done with business owners, accountants, and financial managers, who will be managers and employees of the organization responsible for accounting (Matyokurehwa et al., 2017).

2. Questionnaire Technique

Sample Questionnaire:

1. Satisfied with the current accounting solution to what extent? [VS, S, N, D, VD]

2. Out of the following what do you think is most essential for an accounting system? (Select all that apply: Invoice, Expense management, accounting report, Taxation, Compatibility with other software.

3. How often does it happen that you have some problems with your present accounting activities? That's why I have to ask if you: (Daily, Weekly, Monthly, Rarely, Never)

4. How do you like to connect to an accounting software package? (Desktop, Mobile, Both)

5. To what extent would it be useful for you to have live view on your finances? This assigned objective importance scale is as follows: Very Important, Important, Neutral, Unimportant, Very Unimportant.

6. How much money would you roughly, plan to spend on the accounting software? They can be classified as: Below $20, $20-$50, $50-$100, $100 and above.

7. Would you be willing to take training for new software? (Yes, No, Maybe)

8. You may want to add any other input with respect to your dream accounting system.

Objectives of the Questionnaire:

The questionnaire is designed to provide quantitative data on the usability, satisfaction, preference toward different features and proposed budget. This allows for easier sample acquisition since the project team can gain more insights from a population of SMEs. Aside from that, it would be easier for the team to assess the responses and look at the common needs in order to determine the necessary specifications of the cloud-based accounting system." The questionnaire will be self-administered to a diverse group of SMEs targeted to capture the target market (Scheinholtz & Wilmont, 2011; Shahidi, 2020).

Conclusion

The interview and questionnaire procedures should be recommended for the purpose of getting more comprehensive requirements for the definite cloud-based accounting system. The interviews will help to get the general qualitative ideas more concerning the concrete necessities and problems that SMEs have and the questionnaires will contribute to the obtaining of the quantitative information, with the help of which the main trends and preferences will be defined. Altogether the described technique will enable specification of a comprehensive SRS document that can support the provision of the successful software solution that meets the intended needs of stakeholders.

References:

Matyokurehwa, K., Mavetera, N., & Jokonya, O. (2017). Requirements engineering techniques: a systematic literature review. International Journal of Advanced Research in Computer Science and Software Engineering, 7(6), 858-865. https://doi.org/10.23956/ijarcsse/v6i9/01917

Mauricette, J., Wells, P., & Haar, J. (2022). User perceptions of cloud-based small business accounting software. Pacific Accounting Review, 34(4), 595-613. https://doi.org/10.1108/par-05-2021-0065

Scheinholtz, L. and Wilmont, I. (2011). Interview patterns for requirements elicitation., 72-77. https://doi.org/10.1007/978-3-642-19858-8_9

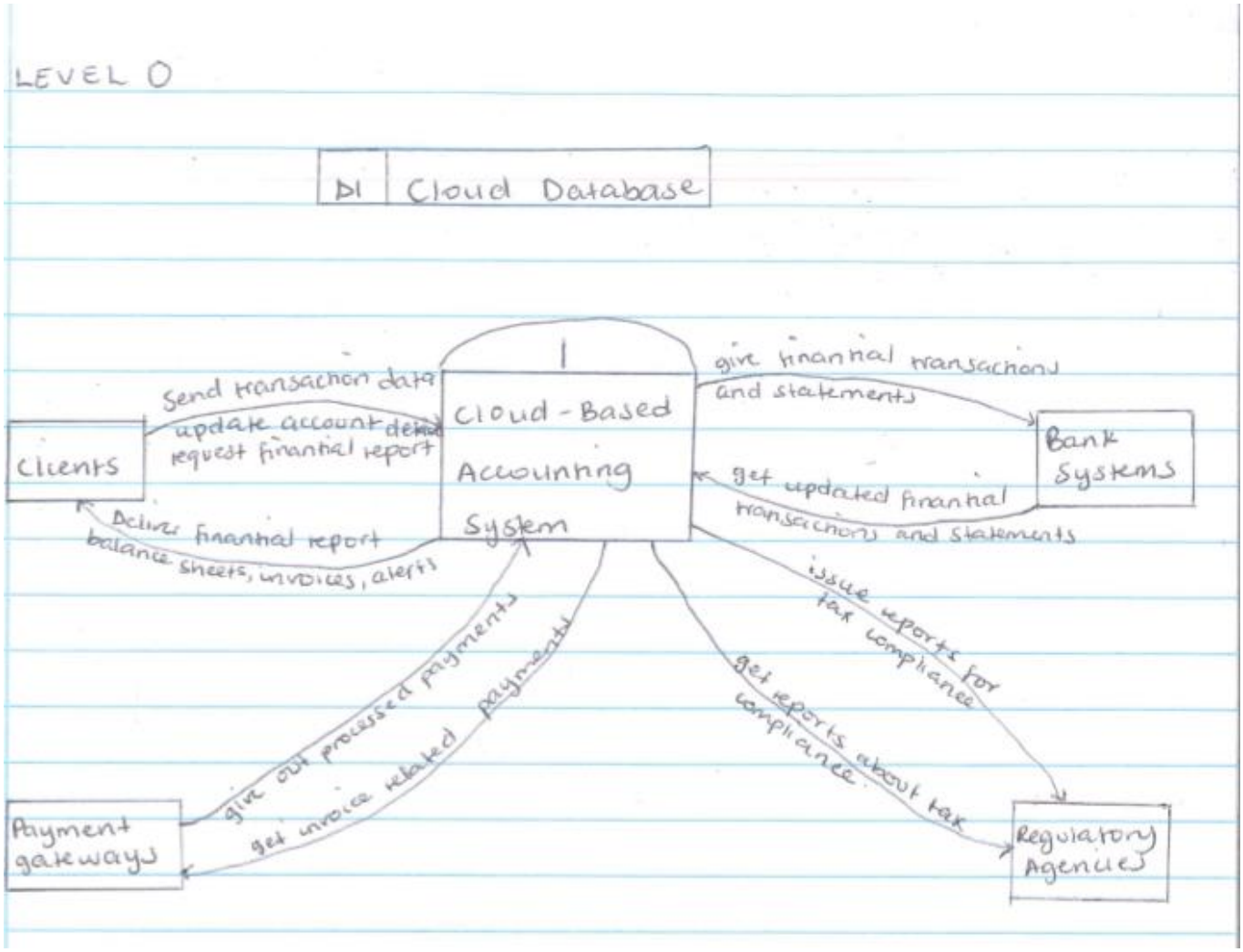
Seniv, M. (2023). Method for selecting a software development methodology taking into account project characteristics. Radio Electronics Computer Science Control, (2), 134. https://doi.org/10.15588/1607-3274-2023-2-14

Shahidi, S. (2020). Comparing the effectiveness of conventional and kano model questionnaire for gathering requirement of online bus reservation system.

International Journal of Innovative Research and Scientific Studies, 3(1), 27-32.
https://doi.org/10.53894/ijirss.v3i1.30

Part four

i)



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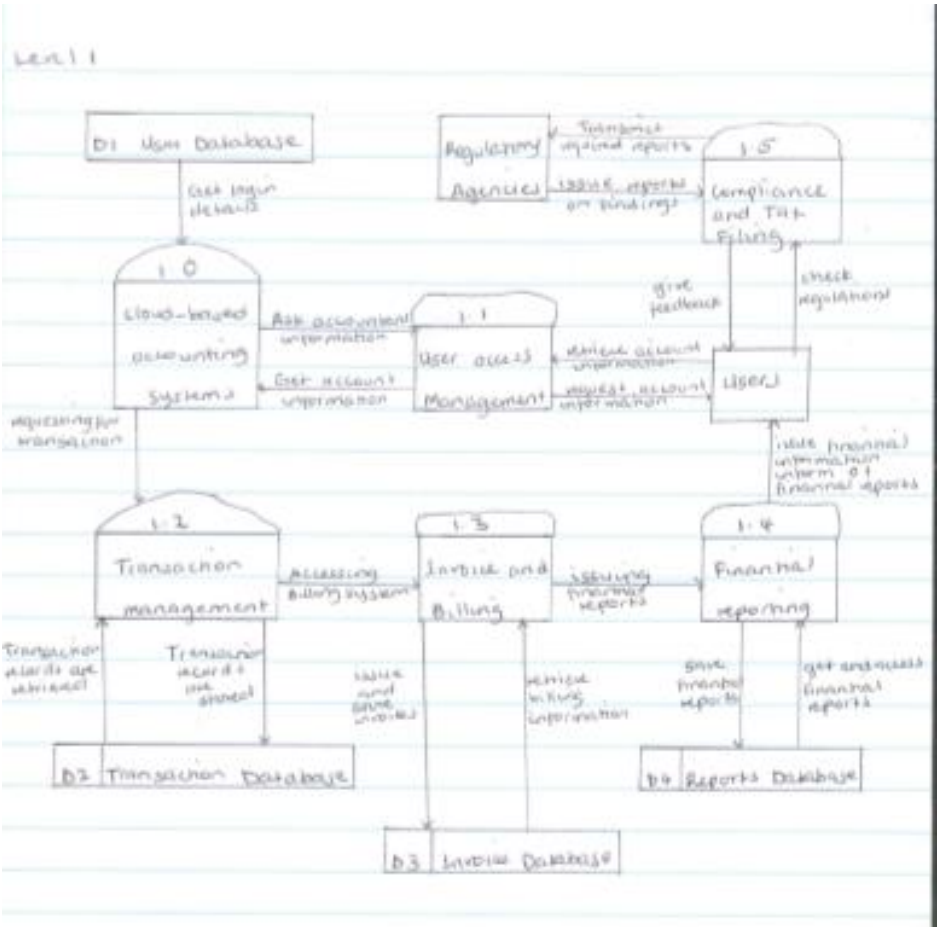
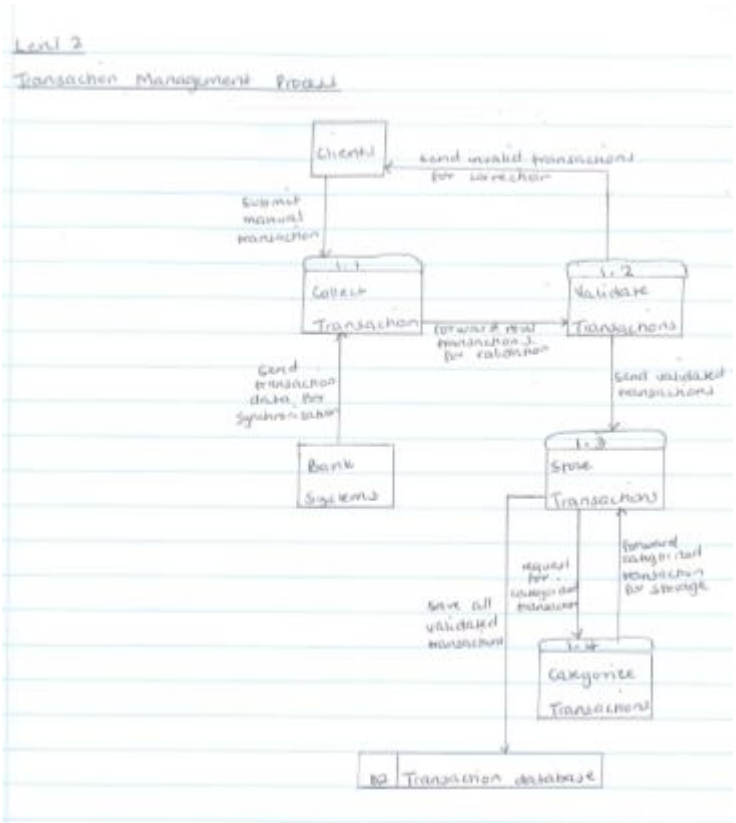
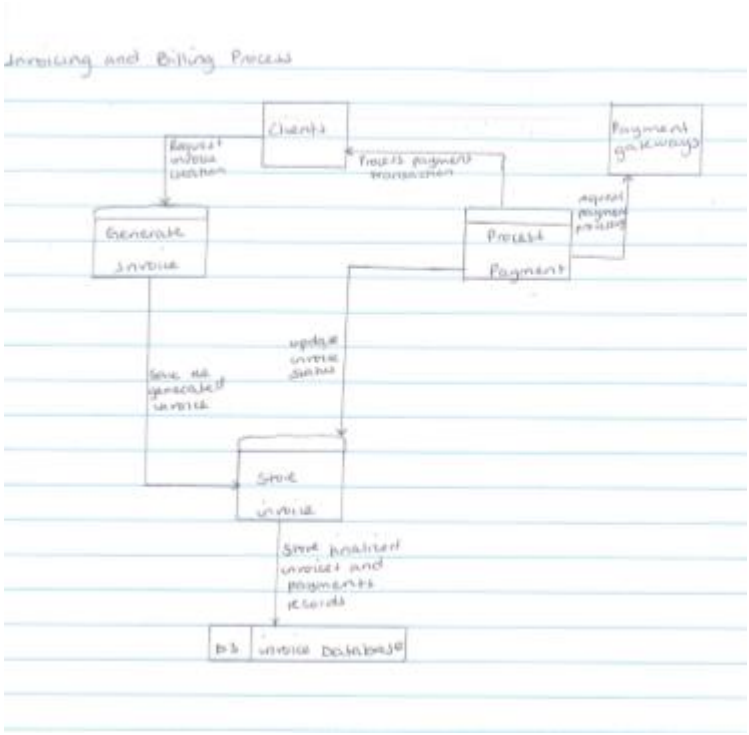

Level 1
D1 User Database
User login details
Regulatory Agencies
Transmit required reports
Issue reports or findings
1.5
Compliance and Tax Filing
1.0
Cloud-based accounting systems
Ask account information
Get account information
1.1
User access Management
Retrieve account information
request account information
Users
Give feedback
Check regulations
Processing for transaction
Send financial information inform of financial reports
1.2
Transaction management
1.3
Invoice and Billing
1.4
Financial reporting
Accessing billing system
Sending financial reports
Transaction details are retrieved
Transaction records are stored
Issue and save invoices
Retrieve billing information
Save financial reports
Get and issues financial reports
D2 Transaction Database
D4 Reports Database
D3 Invoice Database

iii)


Level 2
Transaction Management Process
Clients
Send invalid transactions for correction
Submit manual transaction
1.1
Collect Transaction
1.2
Validate Transactions
Forward invalid transactions for validation
Send transaction data for synchronization
Send validated transactions
Bank Systems
1.3
Store Transactions
Request for categorized transaction
Forward categorized transaction for storage
Save all validated transactions
1.4
Categorize Transactions
D2 Transaction database



iv) Data Dictionary

Processes

1. Cloud-Based Accounting System: This process manages the central functionality of the accounting system, including storage, retrieval, and processing of data securely in the cloud. It ensures data is encrypted, accessible to authorized users, and backed up regularly.

2. User and Access Management: This process handles user roles, access controls, and security. It manages who can access specific data and functionality within the system, including creating, updating, and deactivating user accounts. Key data flows include:

User Registration: Flow of new user information into the system.

Authentication: Flow for verifying user credentials at login.

Authorization: Flow for assigning and verifying user permissions based on roles.

3. Compliance and Tax Filing: Ensures the system aligns with regulatory requirements and provides tax-related reporting. This process helps prepare necessary tax filings, generates compliance reports, and stores audit logs. Data flows include:

Compliance Reporting: Generates reports for regulatory requirements, including audit logs.

Tax Calculation: Calculates taxes based on transactions and prepares filing documents.

Filing Data Submission: Flow that sends tax filing data to relevant authorities.

4. Transaction Management: Manages all financial transactions recorded within the system. This includes creating, updating, and verifying transactions, as well as calculating account balances. Key data flows include:

Collect Transaction: Collect new transactions entered by users and send them for validation.

Store Transactions: All transactions that have been validated are stored in transaction database.

Transaction Validation: Ensures accuracy and completeness of recorded transactions.

5. Invoice and Billing: Manages the creation, distribution, and tracking of invoices. This process tracks customer bills, processes payments, and updates account statuses. Data flows include:

Generate Invoice: Creates an invoice based on recorded transactions and sends it to customers.

Process Payment: All payments are processed with the use of payment gateways.

Store Invoice: Collect generated invoices and those updated from process payment and store them in invoice database.

6. Financial Reporting: This process generates reports to provide insights into financial performance, including profit and loss, balance sheets, and cash flow statements. Data flows include:

Report Generation: Uses transaction and account data to produce financial statements.

Summary Reports: Produces summary reports for management.

Custom Report Requests: Allows users to request specific financial reports based on various criteria.

Data Stores

1. User Database: Stores information about all users registered in the system, including user roles and permissions. Key data elements:

User ID: Unique identifier for each user.

Username: Login name for the user.

Password: Encrypted password for authentication.

Role: Defines user access level (e.g., Admin, Accountant, Viewer).

2. Transaction Database: Stores records of financial transactions. Key data elements:

Transaction ID: Unique identifier for each transaction.

Account ID: Links transaction to an account.

Date: Date of the transaction.

Amount: Value of the transaction.

Description: Details about the transaction.

Transaction Type: Type of transaction (e.g., Debit or Credit).

3. Invoice Database: Stores invoice details, including billing information and statuses. Key data elements:

Invoice ID: Unique identifier for each invoice.

Customer ID: Links invoice to a customer.

Amount Due: Total amount to be paid.

Due Date: Deadline for payment.

Status: Payment status of the invoice (e.g., Paid, Pending, Overdue).

4. Reports Database: Store financial details in form of reports.

Title: Name of the report.

Date: Date on when the report was prepared.

Name: Name of those that prepared the report.

Data Elements

1. User ID: A unique identifier for each user in the system.
2. Customer ID: A unique identifier assigned to each customer.
3. Account ID: A unique identifier for each account.
4. Invoice ID: Unique identifier for each invoice.
5. Amount: Monetary value for transactions and payments.
6. Date: Date associated with transactions or reports.
7. Due Date: Payment deadline for invoices.
8. Role: User access level in the system.
9. Action: Specific action taken by a user, logged for audit purposes.
10. Timestamp: Date and time an action occurred.

Data Flows

1. User Registration: Flow of new user information into User Data. Created when a new user is added.
2. Transaction Entry: Input of transaction data from authorized users into Transaction Data.
3. Generate Invoice: Creates invoices based on transaction data and stores them in Invoice Data.
4. Receive Payment: Flow that records payments into Payment Data and updates Account Data.
5. Compliance Reporting: Uses Compliance Data and Audit Logs to generate reports for regulatory agencies.
6. Tax Calculation and Filing: Calculates taxes based on Transaction Data and prepares filings in Compliance Data.
7. Report Generation: Gathers data from multiple stores to produce financial reports in Financial Reporting.
8. Audit Logging: Logs actions and stores records in Audit Logs for compliance and accountability.