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**PURBANCHAL UNIVERSITY**

**Gomendra Multiple College**

**Faculty of Science and Technology**

**Expense Tracker**

IN PARITAL FULLFILLMNET OF THE REQUIREMENT OF BCA 4th SEMESTER

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# Abstract

The project entitled “Expense Recorder” is to automate the ability to categorize Income and Expense then generate reports and analyze spending patterns over time. This information can be invaluable for making informed financial decisions and achieving financial goals. Top of FormBottom of FormAn expense recorder is a tool or system used to monitor and manage personal or business income and expenses. It helps individuals or organizations keep track of where their money is being spent, enabling them to better understand their financial habits, identify areas for potential savings, and budget more effectively

# Abbreviations

|  |  |  |
| --- | --- | --- |
| 1 | SQL | Standard Query Language |
|  |  |  |
|  |  |  |
|  |  |  |

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# Introduction

An expense recorder is a tool, often in the form of software or an app, designed to help individuals or businesses monitor and manage their spending. It allows users to record their income and expenses, categorize them into different spending categories (such as groceries, utilities, entertainment, etc.) and analyze their spending patterns over time. Expense recorder can vary in features and complexity, but their primary goal is to provide users with insights into their financial habits, helping them make informed decisions, control their spending, and achieve their financial goals.

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## Key features

1. **User-Friendly Interface:** Intuitive Design: The application boasts a clean and intuitive user interface, making it easy for users of all technical levels to navigate and use the features effectively. Visual Programming Elements: Leverages C# with visual programming for interactive and responsive user interactions.
2. **Income and Expense Tracking:** Add Income: Users can input various sources of income such as salary, freelance work, investments, etc. Record Expenses: Users can categorize and log different types of expenses including groceries, utilities, entertainment, and more. Delete Entries: Allows users to update or remove any income or expense entries as needed.
3. **Real-Time Balance Calculation:** Automatic Calculation: The application automatically calculates the remaining balance by subtracting total expenses from the total income. Instant Updates: Balance is updated in real-time with every new entry or modification.
4. **Categorization and Organization:** Expense Categories: Users can categorize expenses for better organization and analysis. Customizable Categories: Allows users to create and manage their own expense categories to suit their specific needs.
5. **Data Management with SQL Server:** Database Integration: Utilizes Microsoft SQL Server for robust and secure data storage. Persistent Data Storage: Ensures that all income and expense data is stored persistently, even after the application is closed. Data Backup and Recovery: Includes features for backing up the database and recovering data to prevent data loss.

# Problem statement

In today's dynamic and interconnected world, the efficient management of expense trackers is a critical aspect of personal and professional life. Users may forget to log certain expenses or make errors when inputting data, leading to inaccuracies in the tracking system. Simply recording expenses is not enough; users also expect meaningful insights and analysis to help them understand their spending habits and make informed financial decisions.

# Objectives and scope

The main objective of the project on Expense Tracker is to increase awareness of where money is being spent. By recording expenses in detail, users gain insights into their spending habits and can make more informed financial decisions. One of the primary goals of an expense tracker is to facilitate budgeting and financial planning. By setting budgets for different expense categories and recording spending against these budgets, users can manage their finances more effectively and work towards their financial goals. By identifying unnecessary or excessive spending, an expense recorder can help users cut down expenses and save money.

## Scope:

* Expense recorders are commonly used by individuals to manage personal finances. Users record expenses related to everyday purchases, bills, and other financial transactions.
* Expense recorders also have a scope in the business world, where they are used to record business income and expenses such as office supplies, travel expenses, and employee reimbursements. This helps businesses maintain accurate financial records and control costs.
* The scope of an expense recorder often includes accessibility and usability features to ensure that users can easily input and access their financial data.

# Technology Stack

## C Sharp

C# (pronounced "C sharp") is a modern, multi-paradigm programming language developed by Microsoft within its .NET initiative. It was first released in 2000 as part of the Microsoft Visual Studio development environment. C# is designed to be simple, efficient, and type-safe, and it is often used for building Windows desktop applications, web applications, mobile applications, cloud-based applications, and more. C# is primarily an object-oriented programming (OOP) language, allowing developers to organize code into classes and objects for better code organization and reusability.C# is statically typed, meaning that the data types of variables are checked at compile-time, reducing the likelihood of runtime errors. C# includes automatic memory management through a garbage collector, which helps developers avoid memory leaks and manually manage memory allocation and deallocation. C# includes features that promote code security, such as strong typing, automatic bounds checking, and support for role-based security.

C# has evolved over the years, with regular updates and new features being introduced to improve the language and support modern software development practices.

## Microsoft SQL Server:

Microsoft SQL Server, often simply referred to as SQL Server, is a relational database management system (RDBMS) developed by Microsoft. It is a powerful and widely used database platform that provides an efficient and scalable solution for managing and storing data. SQL Server is a key component of Microsoft's data platform, alongside other tools such as Azure SQL Database and Azure SQL Data Warehouse for cloud-based solutions. SQL Server is designed to store and manage data in a relational database format, which organizes data into tables with predefined relationships between them. SQL Server uses Transact-SQL, an extension of the SQL (Structured Query Language), for querying and managing data. T-SQL includes additional procedural programming constructs, making it a powerful language for database development. SQL Server is scalable and supports large databases with high transaction volumes. It includes features such as indexing, query optimization, and in-memory processing to enhance performance. It provides robust security features, including user authentication, role-based access control, encryption, and auditing. This helps in ensuring the confidentiality and integrity of the stored data. SQL Server Integration Services is a tool for building data integration and transformation solutions. It allows users to create, manage, and run ETL (Extract, Transform, Load) processes. SQL Server Analysis Services provides online analytical processing (OLAP) and data mining functionalities. It enables users to analyse and explore multidimensional data.Top of Form

# Feasibility analysis

## Technical feasibility

The project is technically feasible as it based on new state-of-the-art technology and available technology is sufficient to complete the project.

## Operational feasibility

It helps office staff keep records, retrieve data, and easily change it. It is also operationally feasible for your organization.

## Economic Feasibility

If the project is successful, the organization will benefit financially as the office can reduce the operational costs of keeping records in the office.

## Schedule feasibility

Thanks to our active team members, we moved on to complete the project within the specified time. We managed to finish the work in about 20 days. This project has another plus in scheduling.

# Hardware and software requirements

## Hardware Requirements

|  |  |
| --- | --- |
| PROCESSOR | Intel Core i3-7100 |
| HDD/SSD | 20 GB. |
| RAM | Minimum 2GB |

## Software Requirements

|  |  |
| --- | --- |
| OS | Windows 8 or Above (32 or 64 bit) |
| Database | Microsoft SQL Server 2011 and  above |
| Other Software | Microsoft, Net Framework |

# ER Diagram

**Expense**

has

**User**

hasass

**Income Income**

# System in action

### Dashboard

A screenshot of a computer

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### A screenshot of a login form Description automatically generatedRegister ScreenLogin Screen

A screen shot of a login form

Description automatically generated

### Add Income Details

A screenshot of a computer

Description automatically generated

### Income Added Sucessfully

A screenshot of a computer

Description automatically generated

### Add Expense Details

A screenshot of a computer

Description automatically generated

### View Income Detail

A screenshot of a computer

Description automatically generated

### Delete Income Detail

A screenshot of a computer

Description automatically generated

### View Expense Detail

A screenshot of a computer

Description automatically generated

### Delete Expense Details

**A screenshot of a computer

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# Project scheduling

# Conclusion

In conclusion, while expense recorder offers valuable tools for managing personal finances, they face several challenges that need to be addressed. Users can manually input their expenses, including the amount spent, date, and category (e.g., groceries, transportation, utilities). Overall, expense recorder serves as valuable tools for promoting financial awareness, enabling users to make informed decisions, and ultimately, achieve their financial goals.

## References

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