**1.4 Organisation of the report**

1.4.1 System Requirements:-

The system requirements for expense tracker will depend on many factors and various programming languages. The factors are given below:-

1. Programming languages like Java script, Css , Html and React are used. Vs code is used for coding. For backend My Sql is used.
2. Development Frameworks: React, Xcode(for ios).
3. Database: SQLite is used.
4. APIs: Integration with banking APIs.
5. Authentication: Implementing secure authentication system like JWT or Firebase authentication.
6. UI/UX Design: Tools like Sketch, Adobe XD are used.

1.4.2 Database:-

A database is a structured collection of data that is organized and stored in a way that allows for efficient retrieval, management, and manipulation of information. It serves as a central repository for storing and managing data, providing mechanisms for inserting, updating, querying, and deleting data.

There are many uses of SQL are as follows:-

1. Data Retrieval:

SQL is primarily used for querying data from relational databases. You can write SELECT statements to retrieve specific data based on criteria, such as filtering rows, sorting results, and joining multiple tables together to fetch related data.

1. Data Modification:

SQL allows you to modify data in a database using INSERT, UPDATE, and DELETE statements. INSERT is used to add new records to a table, UPDATE is used to modify existing records, and DELETE is used to remove records from a table.

1. Data Definition:

SQL also supports Data Definition Language (DDL) statements for defining and modifying the structure of database objects, such as creating and altering tables, indexes, views, and constraints.

1.4.3 Programming Languages:

1. Frontend: You can use languages like JavaScript (with frameworks like React, Angular, or Vue.js) for building the user interface of your app.
2. Backend: Languages such as Python (with frameworks like Django or Flask), Node.js (with frameworks like Express.js), or Ruby (with Ruby on Rails) are commonly used for server-side development.

1.4.4 Authentication:

Authentication is the process of verifying the identity of a user or entity attempting to access a system, application, or resource. It ensures that the user is who they claim to be before granting access to the requested resource. Authentication typically involves presenting credentials, such as a username and password, to a system

In authentication, JWT (JSON Web Token) is a popular method for securely transmitting information between parties as a compact and self-contained token. It is commonly used as a means of authentication in web applications and APIs.

1.4.5 Continuous Integration/ Continuous Deployment(CI/CD):-

1. CI is the practice of regularly integrating code changes from multiple developers into a shared repository, where automated builds and tests are performed.
2. The primary goal of CI is to detect integration errors and conflicts early in the development cycle, ensuring that the codebase remains stable and functional.
3. CD is the practice of automatically deploying code changes to production environments after passing through the CI process.
4. The goal of CD is to automate the deployment process, reducing manual effort, minimizing the risk of human error, and accelerating the delivery of new features and updates to end users.

1.4.6 System Implementation:-

Implementing an expense tracker app involves several steps, including designing the system architecture, developing the frontend and backend components, integrating with databases and third-party services, implementing authentication and authorization, and testing the application.