Industrial Internship Report on

"Console Based Expense Tracker"

Prepared by

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Executive Summary
This report provides details of the Industrial Internship provided by upskill Campus and The IoT Academy in collaboration with Industrial Partner UniConverge Technologies Pvt Ltd (UCT). This internship was focused on a project/problem statement provided by UCT. We had to finish the project including the report in 6 weeks' time. My project was Console Based Expense Tracker This internship gave me a very good opportunity to get exposure to Industrial problems and design/implement solution for that. It was an overall great experience to have this internship.

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1 Preface

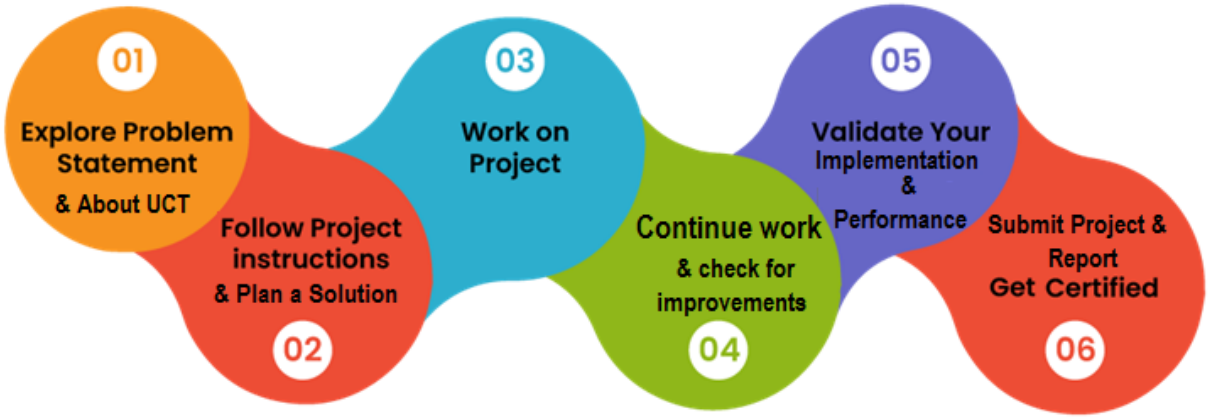
Summary of the whole 6 weeks' work.

About need of relevant Internship in career development.

Brief about Your project/problem statement.

Opportunity given by USC/UCT.

How Program was planned



Your Learnings and overall experience.

Thank to all (with names), who have helped you directly or indirectly.

Your message to your juniors and peers.

2 Introduction

2.1 About UniConverge Technologies Pvt Ltd

A company established in 2013 and working in Digital Transformation domain and providing Industrial solutions with prime focus on sustainability and RoI.

For developing its products and solutions it is leveraging various **Cutting Edge Technologies e.g. Internet of Things (IoT), Cyber Security, Cloud computing (AWS, Azure), Machine Learning, Communication Technologies (4G/5G/LoRaWAN), Java Full Stack, Python, Front end** etc.

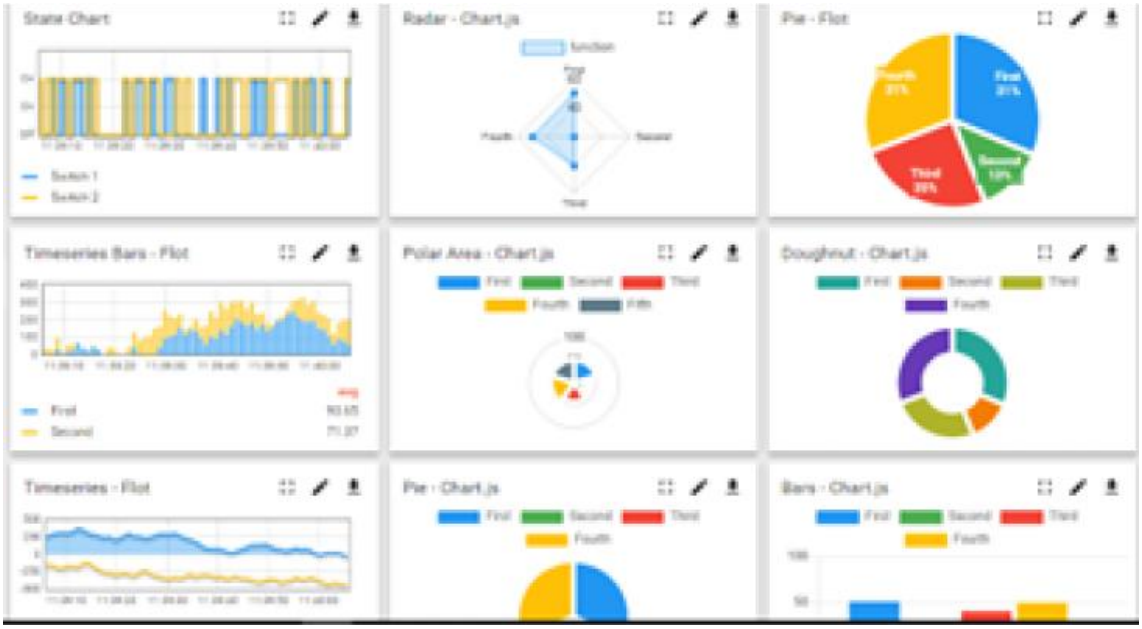
i. UCT IoT Platform (uct Insight)

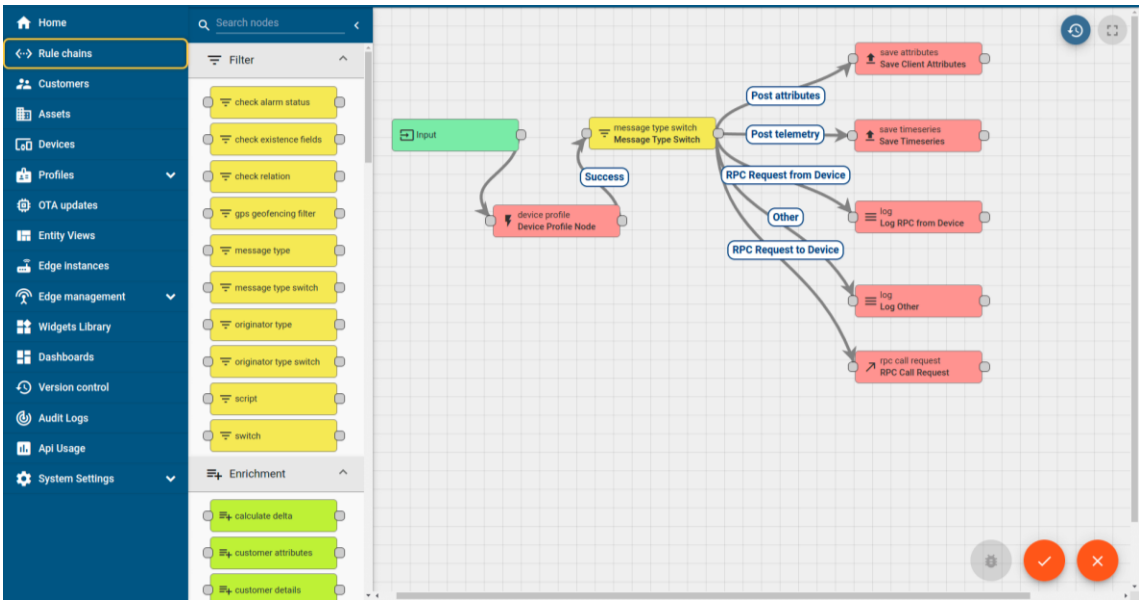
UCT Insight is an IOT platform designed for quick deployment of IOT applications on the same time providing valuable "insight" for your process/business. It has been built in Java for backend and ReactJS for Front end. It has support for MySQL and various NoSql Databases.

- It enables device connectivity via industry standard IoT protocols - MQTT, CoAP, HTTP, Modbus TCP, OPC UA
- It supports both cloud and on-premises deployments.

It has features to

- Build Your own dashboard
- Analytics and Reporting
- Alert and Notification
- Integration with third party application(Power BI, SAP, ERP)
- Rule Engine





ii. Smart Factory Platform (FACTORY WATCH)

Factory watch is a platform for smart factory needs.

It provides Users/ Factory

- with a scalable solution for their Production and asset monitoring
- OEE and predictive maintenance solution scaling up to digital twin for your assets.
- to unleased the true potential of the data that their machines are generating and helps to identify the KPIs and also improve them.
- A modular architecture that allows users to choose the service that they what to start and then can scale to more complex solutions as per their demands.

Its unique SaaS model helps users to save time, cost and money.

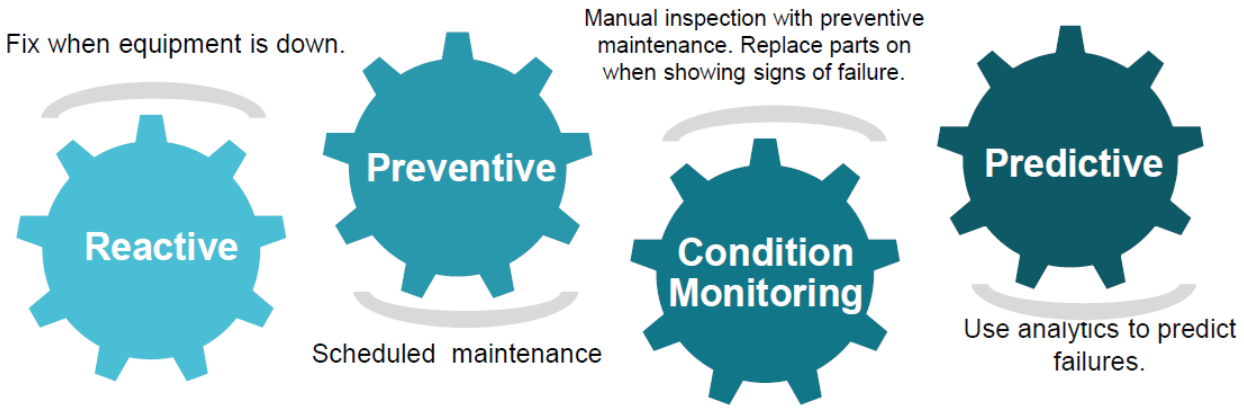
Machine	Operator	Work Order ID	Job ID	Job Performance	Job Progress		Output		Rejection	Time (mins)				Job Status	End Customer
					Start Time	End Time	Planned	Actual		Setup	Pred	Downtime	Idle		
CNC_S7_81	Operator 1	WO0405200001	4168	58%	10:30 AM		55	41	0	80	215	0	45	In Progress	i
CNC_S7_81	Operator 1	WO0405200001	4168	58%	10:30 AM		55	41	0	80	215	0	45	In Progress	i

iii. LoRaWAN based Solution

UCT is one of the early adopters of LoRAWAN teschnology and providing solution in Agritech, Smart cities, Industrial Monitoring, Smart Street Light, Smart Water/ Gas/ Electricity metering solutions etc.

iv. Predictive Maintenance

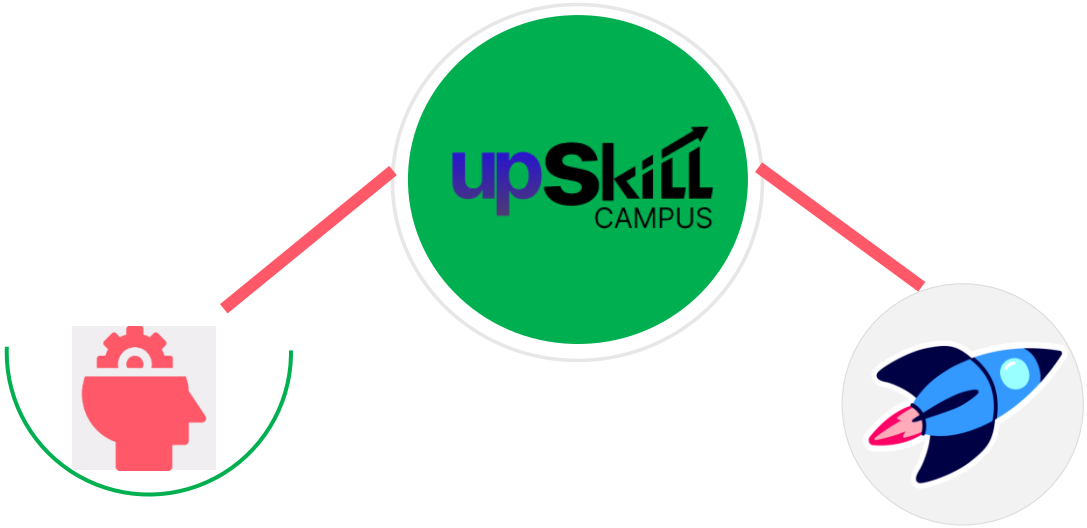
UCT is providing Industrial Machine health monitoring and Predictive maintenance solution leveraging Embedded system, Industrial IoT and Machine Learning Technologies by finding Remaining useful life time of various Machines used in production process.



2.2 About upskill Campus (USC)

upskill Campus along with The IoT Academy and in association with Uniconverge technologies has facilitated the smooth execution of the complete internship process.

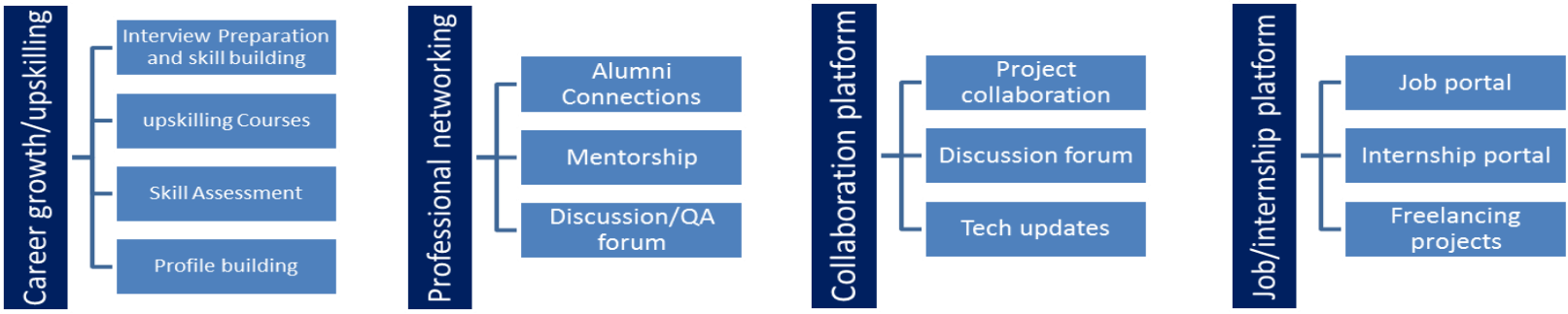
USC is a career development platform that delivers **personalized executive coaching** in a more affordable, scalable and measurable way.



Seeing need of upskilling in self paced manner along-with additional support services e.g. Internship, projects, interaction with Industry experts, Career growth Services

upSkill Campus aiming to upskill 1 million learners in next 5 year

https://www.upskillcampus.com/



2.3 The IoT Academy

The IoT academy is EdTech Division of UCT that is running long executive certification programs in collaboration with EICT Academy, IITK, IITR and IITG in multiple domains.

2.4 Objectives of this Internship program

The objective for this internship program was to

- ☛ get practical experience of working in the industry.
- ☛ to solve real world problems.
- ☛ to have improved job prospects.
- ☛ to have Improved understanding of our field and its applications.
- ☛ to have Personal growth like better communication and problem solving.

3. Problem Statement

This report presents an overview of a console-based expense tracker developed in the Java programming language. The application aims to provide users with a convenient way to track and manage their expenses efficiently. The report outlines the features, design, and implementation details of the expense tracker.

1. Introduction: Managing personal finances effectively is crucial for individuals and businesses alike. An expense tracker helps individuals monitor their spending habits, track expenses, and make informed financial decisions. The console-based expense tracker is designed to fulfil these requirements.
2. Features: The console-based expense tracker offers the following key features:
   a) Expense Recording: Users can record their expenses by providing details such as date, category, description, and amount.
   b) Expense Listing: The tracker allows users to view a list of recorded expenses, including their details.

c) Expense Filtering: Users can filter expenses based on criteria such as date range, category, or specific keywords.
d) Expense Statistics: The application provides statistical information, such as total expenses, average expense per day, and category-wise expense distribution.
e) Data Persistence: The tracker ensures that expense data is stored persistently, allowing users to access their records across multiple sessions.

3. Design and Architecture: The expense tracker follows a modular and object-oriented design to enhance maintainability and extensibility. The core components of the application are:

a) Expense Class: Represents an individual expense and encapsulates its attributes, such as date, category, description, and amount.
b) Expense Manager Class: Manages the expense records, providing functionality to add, retrieve, and filter expenses.
c) ExpenseTrackerApp Class: Acts as the main driver class, facilitating user interactions and menu-based navigation.

4.Implementation Details: The expense tracker is implemented using the Java programming language and adheres to best practices in software development. Key implementation details include:

a) User Input Handling: The application utilizes input streams and scanner objects to accept and process user input.
b) Data Storage: Expense records are stored in a file-based format, such as CSV (Comma-Separated Values), enabling easy data persistence and retrieval.
c) File I/O Operations: Java's file I/O libraries are used to read and write expense records from/to the storage file.
d) Data Validation: The application incorporates input validation to ensure the accuracy and integrity of the recorded expenses.

5. User Guide: To use the console-based expense tracker, users follow these steps:

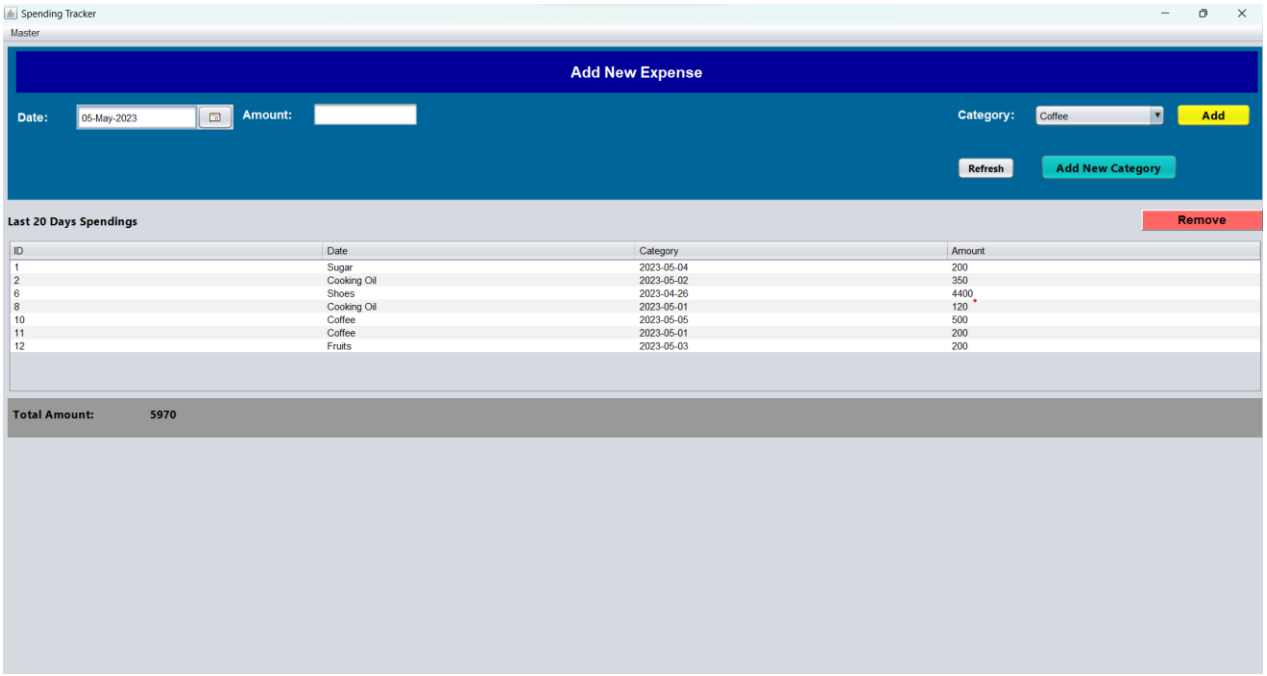
a) Launch the application: Run the Java application from the command line or IDE.

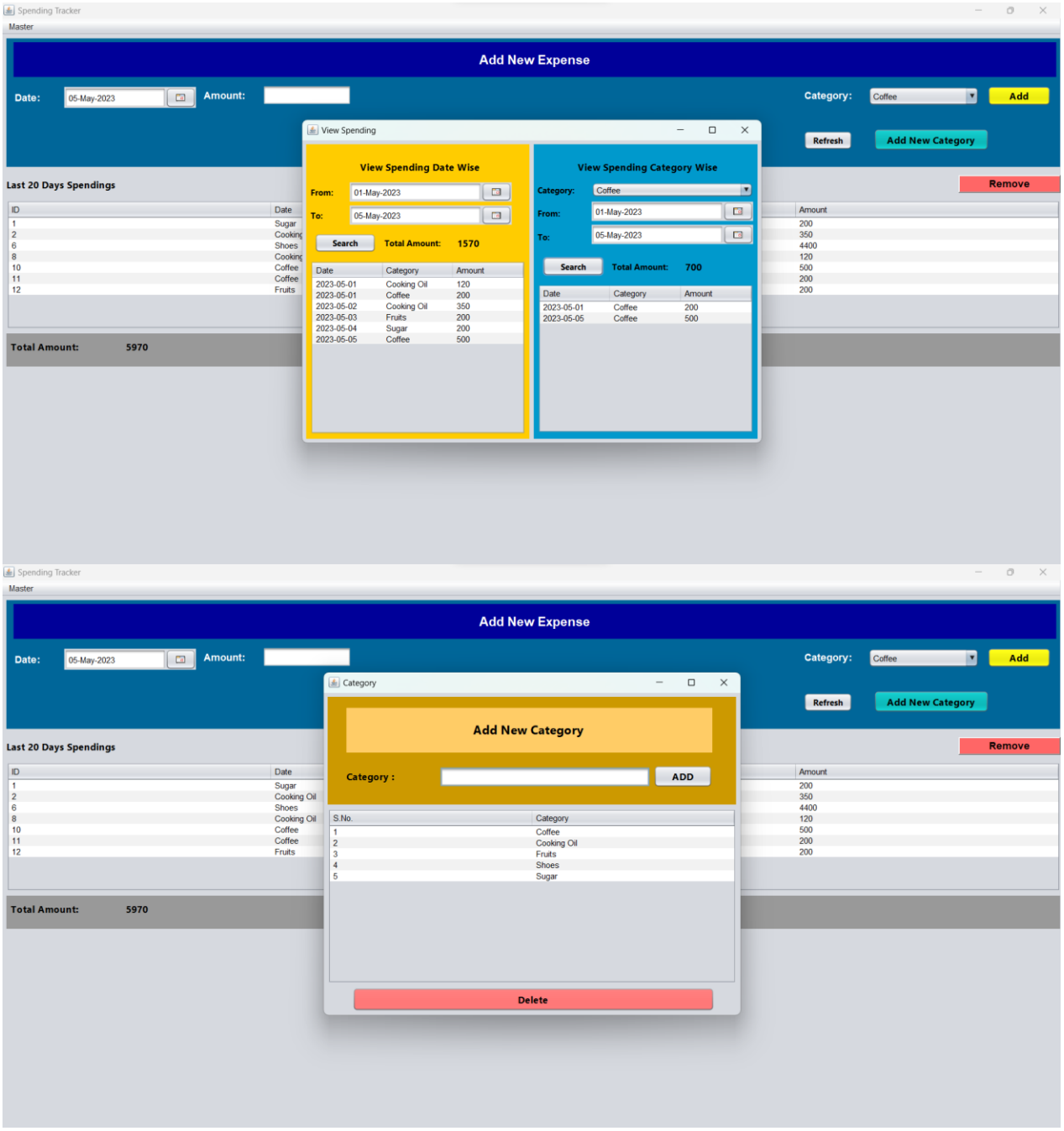
b) Main Menu: The main menu provides options to record expenses, view expenses, apply filters, or view statistics.
c) Recording Expenses: Users can input the expense details prompted by the application.
d) Viewing Expenses: The application displays a list of recorded expenses along with their details.
e) Applying Filters: Users can specify filter criteria to view a subset of expenses based on date range, category, or keywords.
f) Viewing Statistics: Users can access statistical information about their expenses.

6. Conclusion: The console-based expense tracker in Java offers a practical solution for managing personal finances efficiently. It provides essential features for recording, listing, filtering, and analyzing expenses. The modular design and adherence to software development best practices ensure maintainability and extensibility.

7. Future Enhancements: To further improve the expense tracker, potential enhancements could include:

a) User Authentication: Adding user authentication to secure expense data.
b) Graphical User Interface (GUI): Developing a GUI version to enhance the user experience.
c) Budgeting and Goal Setting: Incorporating budgeting features and goal setting to help users achieve financial objectives.
d) Data Analysis: Integrating data visualization tools to generate visual representations of expense patterns.


Spending Tracker
Master
Add New Expense
Date:
05-May-2023
Amount:
Category:
Coffee
Add
Refresh
Add New Category
Last 20 Days Spendings
Remove
ID
Date
Category
Amount
1
Sugar
2023-05-04
200
2
Cooking Oil
2023-05-02
350
6
Shoes
2023-04-26
4400
8
Cooking Oil
2023-05-01
120
10
Coffee
2023-05-05
500
11
Coffee
2023-05-01
200
12
Fruits
2023-05-03
200
Total Amount:
5970


Spending Tracker
Master
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Date:
05-May-2023
Amount:
Category:
Coffee
Add
Refresh
Add New Category
Last 20 Days Spendings
Remove
ID
Date
Amount
Total Amount:
5970
View Spending
View Spending Date Wise
From:
01-May-2023
To:
05-May-2023
Search
Total Amount:
1570
Date
Category
Amount
2023-05-01 Cooking Oil 120
2023-05-01 Coffee 200
2023-05-02 Cooking Oil 350
2023-05-03 Fruits 200
2023-05-04 Sugar 200
2023-05-05 Coffee 500
View Spending Category Wise
Category:
Coffee
From:
01-May-2023
To:
05-May-2023
Search
Total Amount:
700
Date
Category
Amount
2023-05-01 Coffee 200
2023-05-05 Coffee 500
Category
Add New Category
Category :
ADD
S.No.
Category
1 Coffee
2 Cooking Oil
3 Fruits
4 Shoes
5 Sugar
Delete