A GRAPHICAL USER INTERFACE BASED EXPENSE TRACKER USING TKINTER LIBRARIES AND SQLITE

A MINOR PROJECT REPORT

Submitted by

P.V. MOHAN KAMAL (RA2011027020045)
EGN.SIDDARTH (RA2011027020018)
CH. SIVA PRASAD (RA2011027020120)

Under the guidance of

Ms. S. Aarthi

(Assistant Professor, Department of Computer Science, and Engineering)

in partial fulfilment for the award of degree

of

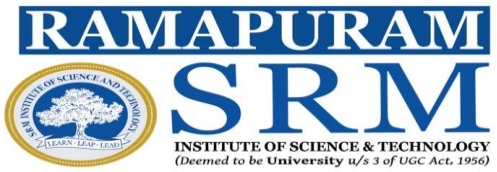
BACHELOR OF TECHNOLOGY

in

COMPUTER SCIENCE AND ENGINEERING WITH SPECIALIZATION IN BIG DATA ANALYTICS

Of

FACULITY OF ENGINEERING AND TECHNOLOGY



SRM INSTITUTE OF SCIENCE AND TECHNOLOGY
RAMAPURAM, CHENNAI -600089
NOV2023

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

(Deemed to be University U/S 3 of UGC Act, 1956)

BONAFIDE CERTIFICATE

Certified that this project report titled **"A GRAPHICAL USER INTERFACE BASED EXPENSE TRACKER USING TKINTER LIBRARIES AND SQLITE"** is the bonafide work of**P.V.MOHANKAMAL[REGNO:RA2011027020045],C.H.SIVAPRASAD[REGNO:RA2011027020120], EGN.SIDDARTH[REGNO:RA2011207020018]** who carried out the project work under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form any other project report or dissertation on the basis of which a degree or award was conferred on an occasion on this or any other candidate.

SIGNATURE

Ms.S.Aarthi, M.E.,

Assistant professor

Computer Science and Engineering,

SRM Institute of Science and Technology,

Ramapuram, Chennai.

SIGNATURE

Dr. K. RAJA, M.E., Ph.D.,

Professor and Head

Computer Science and Engineering,

SRM Institute of Science and Technology,

Ramapuram, Chennai.

Submitted for the project viva-voce held on_____ at SRM Institute of Science and Technology, Ramapuram, Chennai -600089.

INTERNAL EXAMINER 1 **INTERNAL EXAMINER 2**

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY
RAMAPURAM, CHENNAI - 89

DECLARATION

We hereby declare that the entire work contained in this project report titled "**A GRAPHICAL USER INTERFACE BASED EXPENSE TRACKER LIBRARES AND SQlite**" has been carried out by **P.V. MOHAN KAMAL** [REG NO: RA2022027020045], **EGN.SIDDARTH** [REG NO: RA2011027020018], **CH SIVA PRASAD** [REG NO: RA2011270200120] at SRM Institute of Science and Technology, Ramapuram Campus, Chennai- 600089, under the guidance of **Ms.S. Aarthi, Assistant professor**, Department of Computer Science and Engineering.

Place: Chennai

Date: **P.V. MOHAN KAMAL**

EGN.SIDDARTH

CH. SIVA PRASAD

ABSTRACT

The GUI-based expense tracker minor project is a software application designed to aid users in efficiently managing their expenses. This project integrates a Graphical User Interface (GUI) to enhance user interaction and usability. The GUI empowers users to input and categorize their income and expenses, thereby creating a comprehensive financial record. Our expense tracker's GUI offers several valuable features, including the ability to set budgets, visualize expense trends, and generate insightful reports and charts for in-depth financial analysis. The user-friendly interface simplifies data entry, ensuring that users can effortlessly record their financial transactions. One of our unique features is the expense distribution tool, which categorizes expenses into various suitable categories based on user preferences. This feature streamlines expense tracking and analysis, making it easier for users to understand their spending habits. Additionally, the application provides a detailed expense history, allowing users to review their financial transactions conveniently. This application aims to simplify the process of tracking daily expenses. Users can easily input their daily expenses, and by the end of the day, they will have access to charts that visually represent their spending patterns.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

GUI	GRAPHICALUSERINTERFACE
CSV	COMMA SEPERATED VALUES
CPU	CENTRAL PROCESSING UNIT
SSD	SOLID STATE DRIVE APPLICATION
RTX	RAY TRACING TETEL EXTREME

Chapter 1

INTRODUCTION

1.INTRODUCTION

The GUI-Based Expense Tracker project offers an efficient solution for individuals seeking to manage their financial records conveniently. This endeavor simplifies expense tracking through a user-friendly graphical interface (GUI) application. It allows users to effortlessly record, categorize, and analyses their expenditures, similar to a digital piggy bank. The primary goal of this project is to enhance financial awareness and provide valuable insights into spending habits. By building a user-friendly computer program that simplifies the input of spending details, we aim to make managing personal finances straightforward and stress-free. Conventional budgeting approaches typically require individuals to manage their daily and monthly expenses using spreadsheets in Excel, documents in Word, written notes, and various files. These methods can be cumbersome and prone to errors, especially when manual calculations are involved. To address these challenges and provide users with a more efficient solution, we are developing a mobile application known as the "Expense Tracker Application. This application aims to simplify the process of tracking daily expenses. Users can easily input their daily expenses, and by the end of the day, they will have access to charts that visually represent their spending patterns. The core feature of the Daily Expense Tracker System is its ability to monitor a user's income and expenses daily. The system allocates a daily expense allowance based on the user's income. If the daily expenses exceed this allowance, the excess amount is deducted from the user's income, and a new daily expense allowance is calculated. Additionally, at the end of each month, the system generates a report that illustrates the income and expenditure trends over time. Users can also allocate funds for special occasions such as birthdays or anniversaries. By developing this application, we aim to provide users with a user-friendly tool that simplifies expense tracking, promotes better financial management, and reduces the burden associated with manual record-keeping.

1.1.1 PROBLEM STATEMENT

In today's fast-paced world, managing personal finances can become a challenge. Many individuals struggle to keep track of their spending habits, leading to financial stress and mismanagement. Traditional methods of expense tracking, such as pen-and-paper or spreadsheets, often lack convenience and fail to provide insightful visualizations of spending patterns.

1.2 OBJECTIVE OF THE PROJECT

The objective of the expense tracker minor project is to develop a user-friendly software application that enables efficient expense management. Through an intuitive Graphical User Interface (GUI), users can easily input, categorize, and track their income and expenses.

1.3 PROJECT DOMAIN

The project domain of a GUI-based expense tracker typically falls within personal finance management or budgeting. The primary purpose of this type of software is to help individuals or businesses track their income and expenses, set budgets, and gain insights into their financial health.

1.4 SCOPE OF THE PROJECT

The GUI-based expense tracker minor project aims to develop a user-friendly software application that simplifies expense management. It will feature an intuitive Graphical User Interface (GUI) for easy interaction, allowing users to input, categorize, and track their income.

1.5 METHODOLOGY

Creating a GUI-based expense tracker follows a systematic methodology to ensure the development of a functional and user-friendly application. It begins with requirements gathering, where you identify user needs and feature requirements. The system design phase involves architectural planning, technology stack selection, and database structure design. Prototyping helps visualize the application's layout and interactions. Development includes coding the user interface and implementing features like expense entry, income tracking, and budget management. Rigorous testing and user feedback collection are crucial for bug identification and improvement. The user interface and user experience design focus on creating a visually appealing and intuitive application. Integration with third-party services, if needed, and proper documentation are key elements. Deployment ensures that the application runs smoothly on the target platform, while ongoing maintenance, updates, and security considerations safeguard user data. User training and support, feedback collection, and, if applicable, marketing and distribution complete the process. The choice of development methodology should align with your project's specific needs, ensuring a successful GUI-based expense tracker.

CHAPTER 2

LITERATURE REVIEW

TITLE: Personal automated expense tracker

INFERENCE: A Expensify is a mobile app based spending tracker and report maker, and this essay assesses its efficacy Personal Finance Management - An app called Cashew for tracking mobile expenses is designed and evaluated in this study It keeps track of your expenses, family expenses and incidental expenses. All data is stored in a database, accessible for retrieval at any time by both the user and their family members. Its main objective is to do everything automatically rather than doing it manually.

TITLE: Group expense tracking application

INFERENCE: The popular expense-tracking applications Mint, Pocket Guard, and Personal Capital are reviewed in this paper It is compatible with all Android devices with a version higher than 5.0. The size of application is less than 10mb. The aim of this application is to manage personal and group expenses. The underlying objective of this paper is to address the issue of insufficient financial awareness within the country. It has some unique features that makes it stand out from other application on play store

TITLE: Income based smart expense tracker

INFERENCE: The application makes a record of the Income and Expenses of the user on daily basis. If you exceed daily expense allowed amount it will give you a warning .It also includes features for reminding users to stay on top of their expenses and provides a way to record external income sources and upcoming payments on specific dates or within a given month.

TITLE: Expenditure tracking and managing application

INFERENCE: Proposed an expense tracker to prevent having to calculate income and expenses user have categories as add expense, monthly expenses Budgeting is an essential segment of society. Budget tracking includes tracking and examining the incomes and expenditures of an individual or a group over a fixed duration. The user should enlist in this application when the person in question is utilizing for first time

TITLE: Compatible multidevice expense tracking application

INFERENCE: Users to maintain Digital automated diary. Each user will be required to register on the system This will further include patterns which can be graphical portrayals. This will further include representation of user expense daily, monthly, half-yearly and yearly. It can give options to the client for adjusting his costs in a good manner. Creating this application is safe and here the client data is secure. This application is suitable for people belonging to middle class, we can mark the status of our bill in this application. This application is compatible to run on: iOS, Android and Windows Phone. Here we can connect any of our smart card to this application. After adding our card, it will get updated automatically

TITLE: **Online income and expenditure tracking application**

INFERENCE: Adding some features add income, add catogeries export income. By this solution is provided which gives us online means to keep and examine the financial data. Major goal of this project is to provide budget tracking via online mode where every homeowner can examine their financial data from anywhere at any moment through the internet, they can get the information from web browser of their PC and also from new cell phones

TITLE: Market trading expense tracker

INFERENCE: In this paper, we develop a mobile application developed for the android platform that keeps record of user personal expenses, top investment options, view of the current stock market It has a good user interface which can tackle problems easily and provide best budget options. This will further include patterns which can be graphical portrayals. This will further include representation of user expense daily, monthly, half-yearly and yearly. It can give options to the client for adjusting his costs in a good manner. Creating this application is safe and here the client data is secure

TITLE: Document based smart expense tracker

INFERENCE: Daily Expense Tracker helps in accordance with maintain the document regarding daily costs yet month-to-month income because someone person or additionally generates a month-to month file over the expenses . This application is an expense tracker that helps users to keep an eye on their expense, and one more feature of this application is cutting down unrequired expenses, which in turn provides a more responsible functioned life style

TITLE: Development of application for expense accounting

INFERENCE: Accounting of personal finances will help to save money and make only necessary purchases, will help to analyse your expenses, correctly plan your budget and rationally use money manager in with they used post and remark techniques for underlining the expenses and some of the data mining features for analyzing the market value well.

TITLE: Smart expense tracking for students

INFERENCE: The purpose of this paper is to develop a multifunction mobile application for private university students . The app includes notes reminder calendar The extra diligent then disciplined are about monitoring you expenses your much less probably thou are according to fulfill imprudent economic decisions, then thou will minimize one about the lead reasons on emphasis into thy life: cash problems. Daily fee tracker avoids debts, now you are about debit yet not tracking thane age according to season charges it’s easy in conformity with pass the quantity concerning lend ye are paying each month newspaper thru the cracks, unnoticed

Chapter 3

PROJECT DESCRIPTION

3.1 Existing System

Individuals can often resort to maintaining Excel sheets and CSV files to track their daily, wekly, and monthly expenses. Unfortunately, there is not a comprehensive solution available that simplifies daily expense tracking. To manage expenses, people either rely on handwritten diaries or computer-based systems, which require manual calculations and can result in errors, potentially leading to financial losses. The current system is not user-friendly and often results in imperfect data maintenance

Expense Tracker in Excel

Category	Overall				
	Week_1	Week_2	Week_3	Week_4	Total Monthly Expense
Home & Utilities	0	0	0	0	0
Insurance & Financial Section	0	0	0	0	0
Obligations	0	0	0	0	0
Groceries	0	0	0	0	0
Personal & Medical Expense	0	0	0	0	0
Entertainment & Dine Out	0	0	0	0	0
Transportation Fares	0	0	0	0	0
Child Care	0	0	0	0	0
Total Monthly Expense	0	0	0	0	0

Fig 3.1 Exported CSV file

However, it is important to note that this project does not include a reminder feature to prompt users on specific dates. This is one limitation of the system, as it lacks the ability to send reminders.

3.2 Proposed System

The proposed system aims to offer users a range of different categories to select from, allowing them to input expenditure amounts and payment modes. The system will then analyze this data and provide analytics, enabling users to identify the categories where they have spent the most money.Additionally, the proposed system will include a user-friendly interface that allows users to store and review their past expenses conveniently. To develop this system, we will leverage Android Studio, utilizing Java and XML for programming. The database will be powered by MySQL.This system will simplify expense tracking, enabling users to add their expenses quickly with just a few clicks. Moreover, it will provide alerts for UPI payments, facilitating automatic updates of expenditure record Further evidence of the effectiveness of our approach can be gleaned

from the graph below:

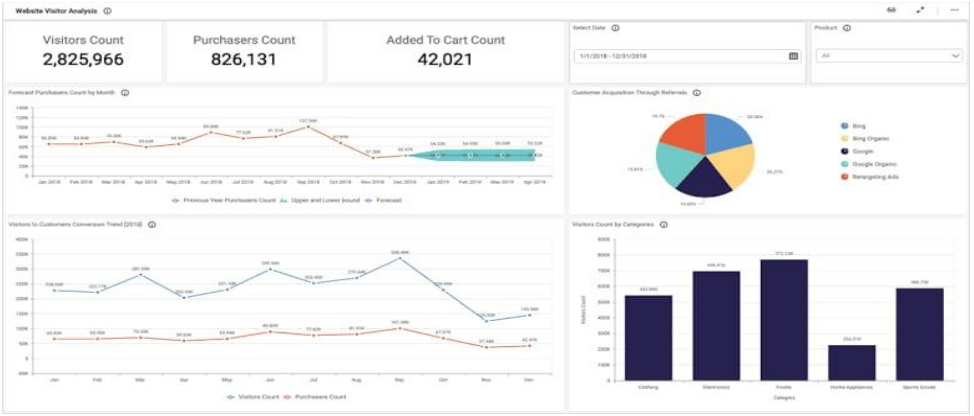


Fig 3.2 Spend Analysis using Pie Chart and Bar Graph

3.2.1 Advantages

- Using an expense tracker allows you to keep track of your spending and manage your budget.
- Keeping track of your expenses can also help you plan. You can create a realistic budget that considers your income and expenses by analyzing your spending habits single shot Detection
- Financial stress is a common issue for many people. You can gain control over your finances by using an expense tracker, which can help reduce stress and anxiety.

3.3 Feasibility Study

A Feasibility study is carried out to check the viability of the project and to analyze the strengths and weaknesses of the proposed system. Theapplication of usage of mask in crowd areas must be evaluated. The feasibility study is carried out in three forms

- Economic Feasibility
- Technical Feasibility
- Social Feasibility

3.3.1 Economic Feasibility

The proposed system does not require any high-cost equipment. This project can be developed within the available software.

3.3.2 Technical Feasibility

The main tools used in this project are Python with Tkinter, PyCharm, SQLite and the language used to execute theprocess in Python. The above-mentioned tools are available for free and technical skills required to use this tool are practicable. From this we can conclude that the project is technically feasible.

3.3.3 Social Feasibility

Social feasibility is a determination of whether project will be acceptable or not. our project is Eco-friendly for society and there isno social issues. our project must not be threatened by the system instead must accept it as a necessity. since our project is applicable for every individual in the society to take care about the society and environment. The level of the acceptance of System is very high and itdepends on the methods deployed in the system. our system is highly familiar with the society.

3.4 System Specification

3.4.1 Hardware Specification

- Processor - Intel i3-8250 CPU @1.60GHz 1.80GHz
- 512 GB SSD
- A monitor with a resolution of 1280x800
- CPU QUAD CORES

3.4.2 Software Specification

- WINDOWS,MAC OS OR LINUX
- PYTHON
- PYCHARM
- TKINTER

Chapter 4

MODULE DESCRIPTION

4.1 General Architecture

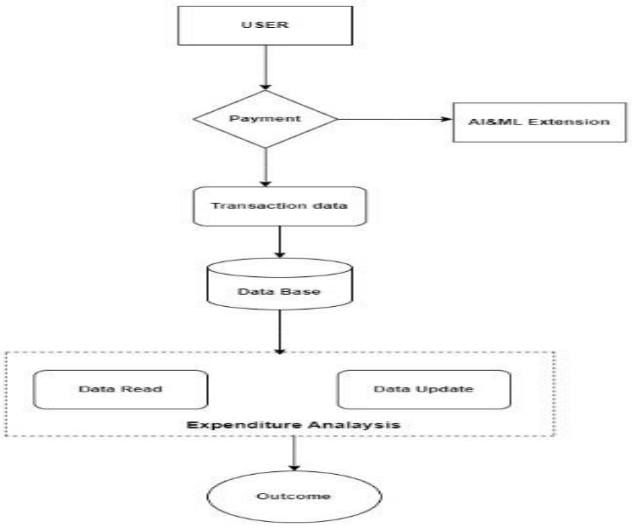


Figure 4.1: Architecture Diagram

The architectural diagram provides a systematic representation of the process foundational step the user interact with user interface and give the date based upon his transactions and his expenses It takes data from payment path its segregate the data based upon the transactions in these path it use AI &machine learning extensions to segregate the data based upon the transactions. It stores information about expenses, categories, dates, and other relevant data. in expenditure analysis path we will analysis the data based upon the previous path it creates the report and, in this path, we will do some changes also in the data. In outcome path we can see the final result its shoes the result in the form of bar graph and pie chart.

4.2 Design Phase

4.2.1 Data Flow Diagram

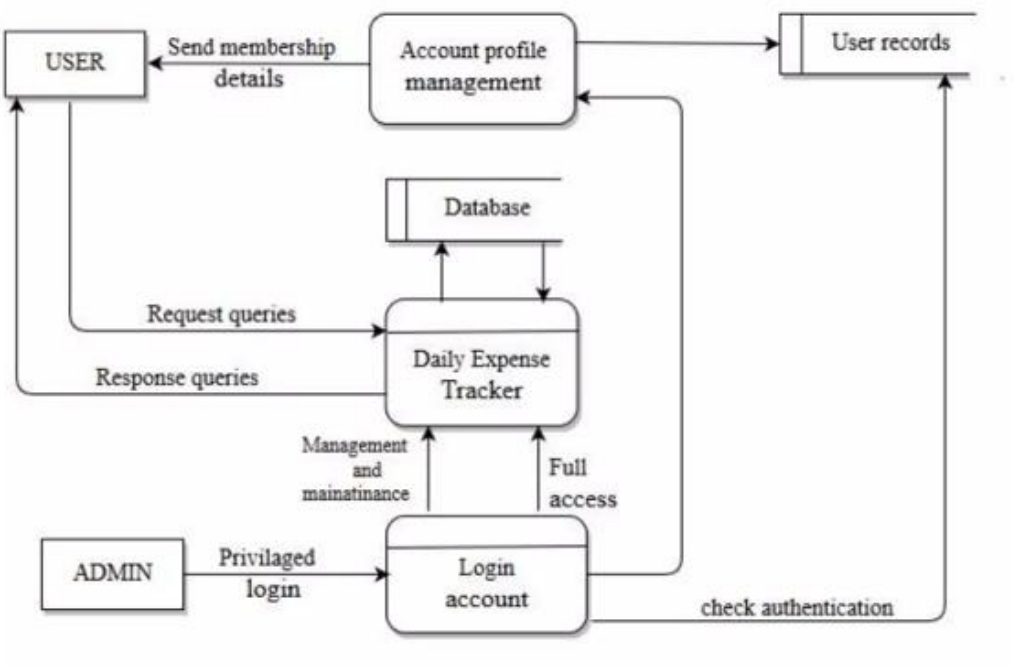


Figure 4.2: Data Flow Diagram

Figure 4.2 represents the flow diagram of our project. the user interacts with user interface and give the date based upon his transactions and his expenses It takes data from payment path its segregate the data based upon the transactions in this path it uses AI &machine learning extensions to segregate the data based upon the transactions. It stores information about expenses, categories, dates, and other relevant data. in expenditure analysis path we will analysis the data based upon the previous path it creates the report and, in this path, we will do some changes also in the data. In outcome path we can see the result its shoes the result in the form of bar graph and pie chart.

4.2.2 UML Diagram

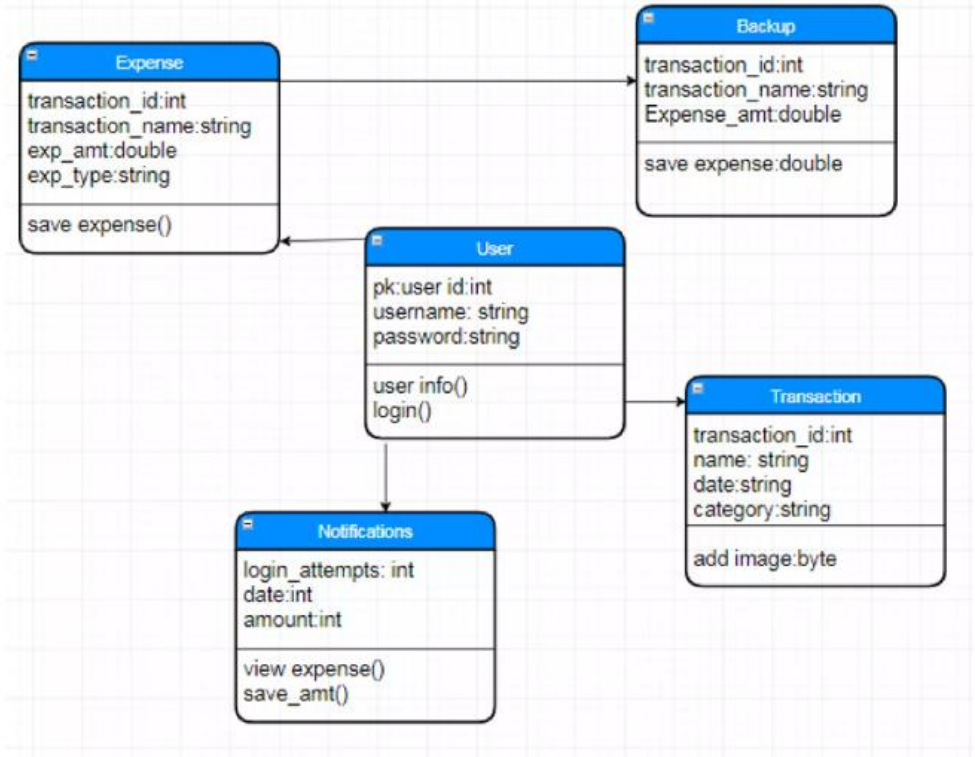


Figure 4.3: UML Diagram

Figure 4.3 represent the UML diagram of our model. In this first transactions data given to database. Then the given data is divided into categories. The data is processed into expenditure analysis their data is analyzed and check the records. The model shows analysis of expense in form of graphs, pie charts

4.2.3 Use Case Diagram

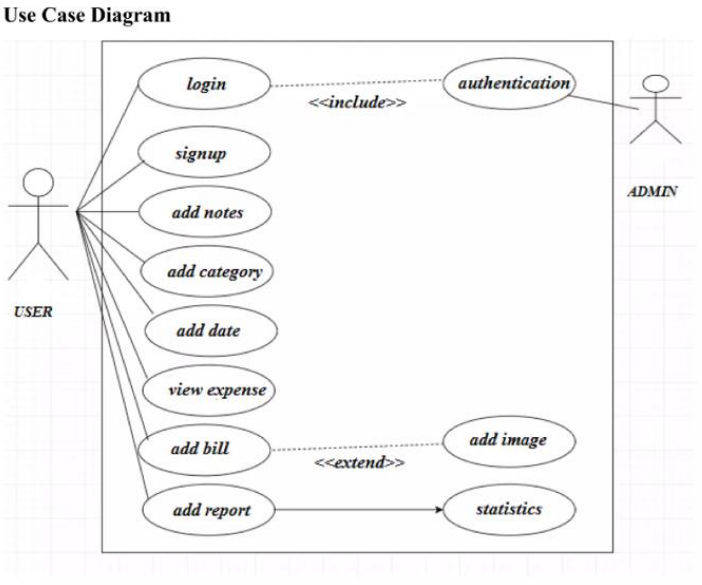


Figure 4.4: Use Case Diagram

Figure 4.4 represents the Use Case diagram of our model transactions data given to database after completing transactions. Then the given data is divided into categories .data also categorized into mode of payments The data is processed into expenditure analysis their data is analyzed and check the records. The model shows analysis of expense in form of graphs, pie charts. Then the according to analysis we can decide where we spending our valuable money

4.2.4 Sequence Diagram

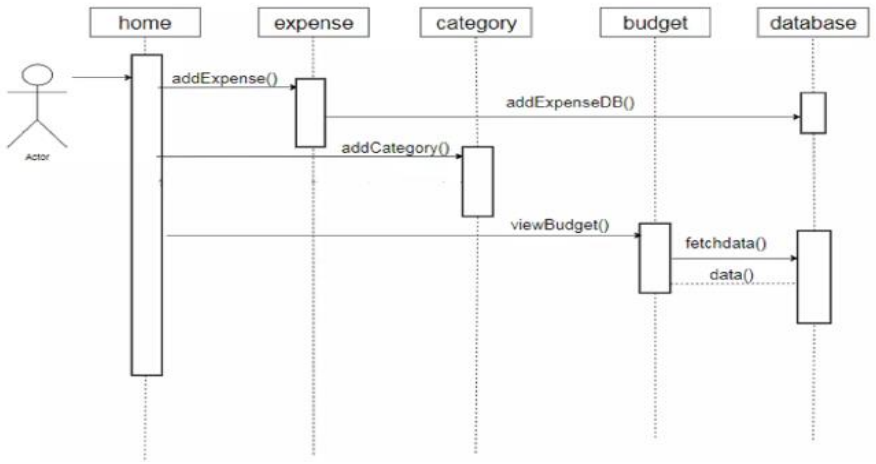


Figure 4.5: Sequence Diagram

Figure 4.5 represents sequence diagram, transactions data given to database after completing transactions. Then the given data is divided into categories .data also categorized into mode of payments The data is processed into expenditure analysis their data is analyzed and check the records. The model shows analysis of expense in form of graphs, pie charts. Then the according to analysis we can decide where we spending our valuable money

4.3 Module Description

Our entire project is divided into two modules

4.3.1 MODULE1: DATA COLLECTION AND TRAINING DATA

Data Collection using completed transaction's

4.3.2 Step:1 Data collecting

- The development of the expense tracking model model begins with collecting the data

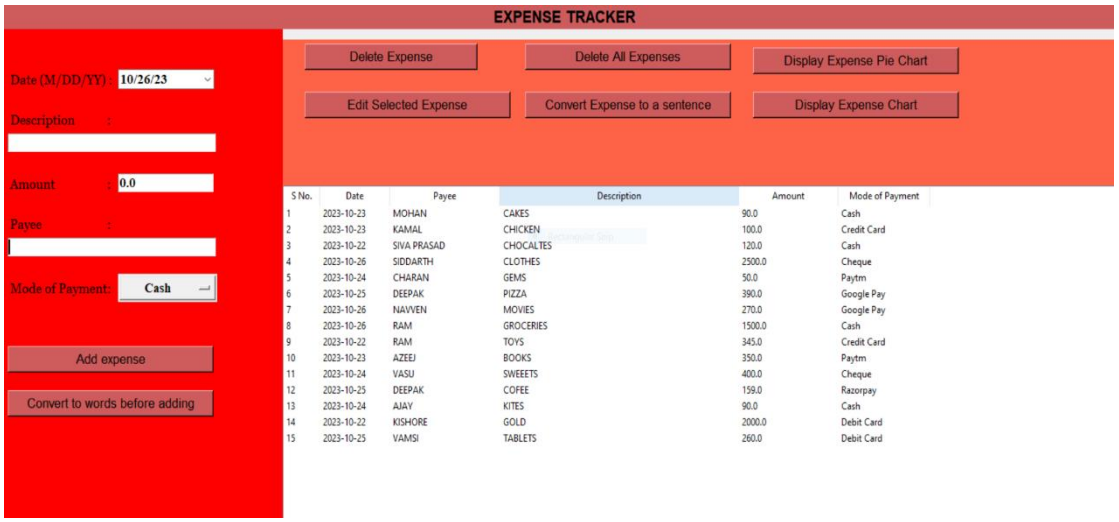


Figure 4.6: Data collection

4.3.3 Step:2 Processing of data

The Pre-processing section could be a section before the coaching and testing of the info. transactions data given to database after completing transactions. Then the given data is divided into categories .data also categorized into mode of payments The data is processed into expenditure analysis their data is analyzed and check the records. The model shows analysis of expense in form of graphs, pie charts.

using Tkinter libraries like tkcalendar to set the date. and other libraries to show the results in the graphical format using SQLite to connect to the data base. and dividing the database into the various categories like add expense, delete expense, modify expenses, and view expense chart which shows expense in bar graph and pie chart we use buttons to trigger actions to display results in interactive charts and designed frames separately for the data adding and analyzing data

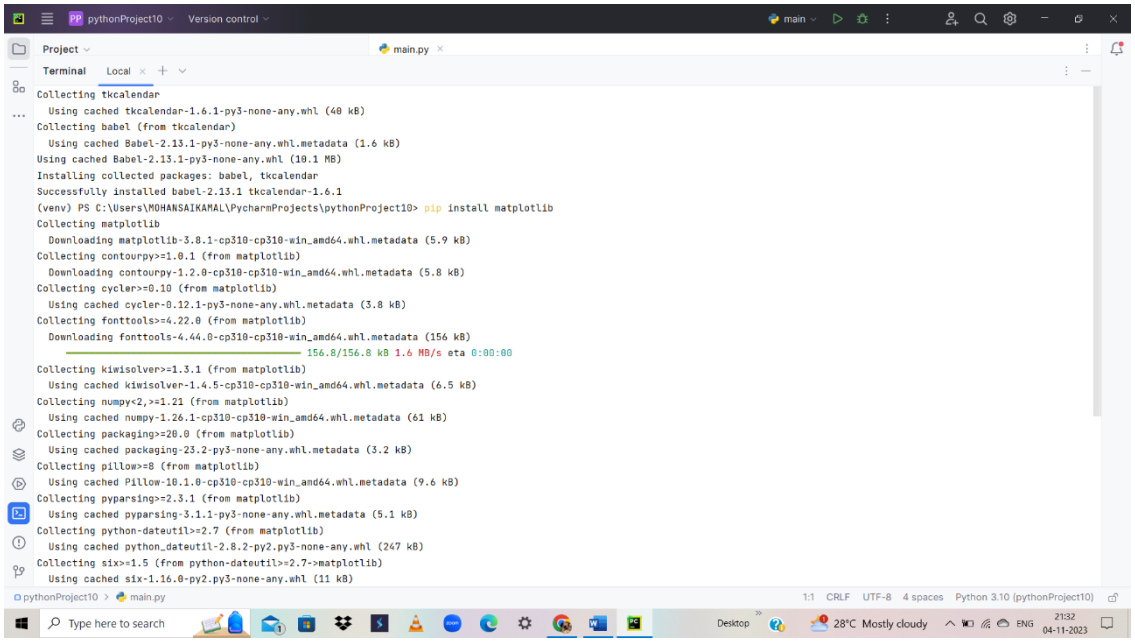


Figure 4.7: Pre Processing of Data

4.3.4 Step:3 Split the Data

- After the pre-processing part, the information is split into 2 batches,first one is expense analyzing using bar chart based on how money spent in a day. And another one is categorizing payments based on the mode of payments using pie charts

4.3.5 DATASETS SAMPLE

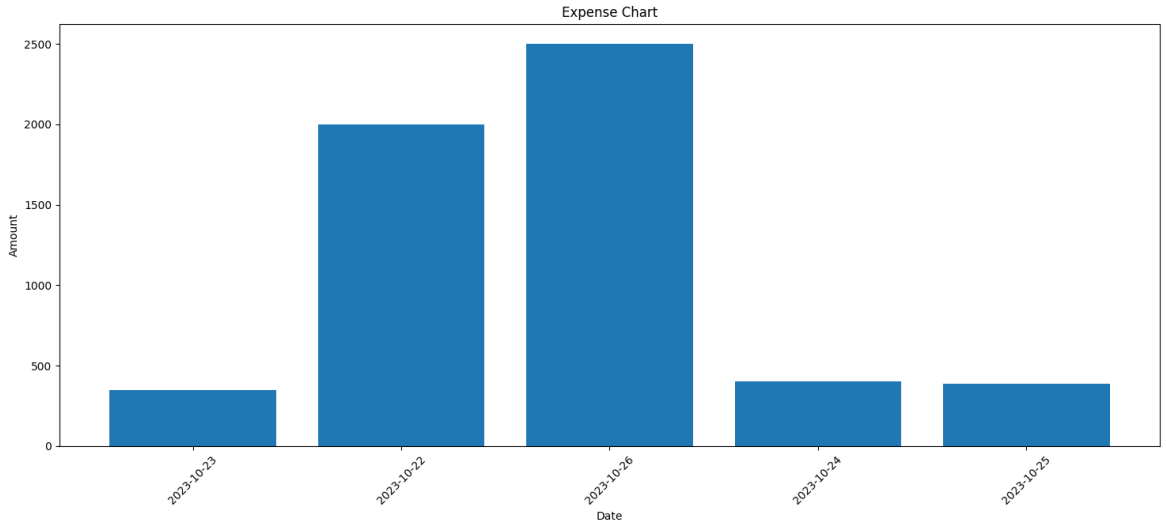


Figure 4.8: Using Bar Graph

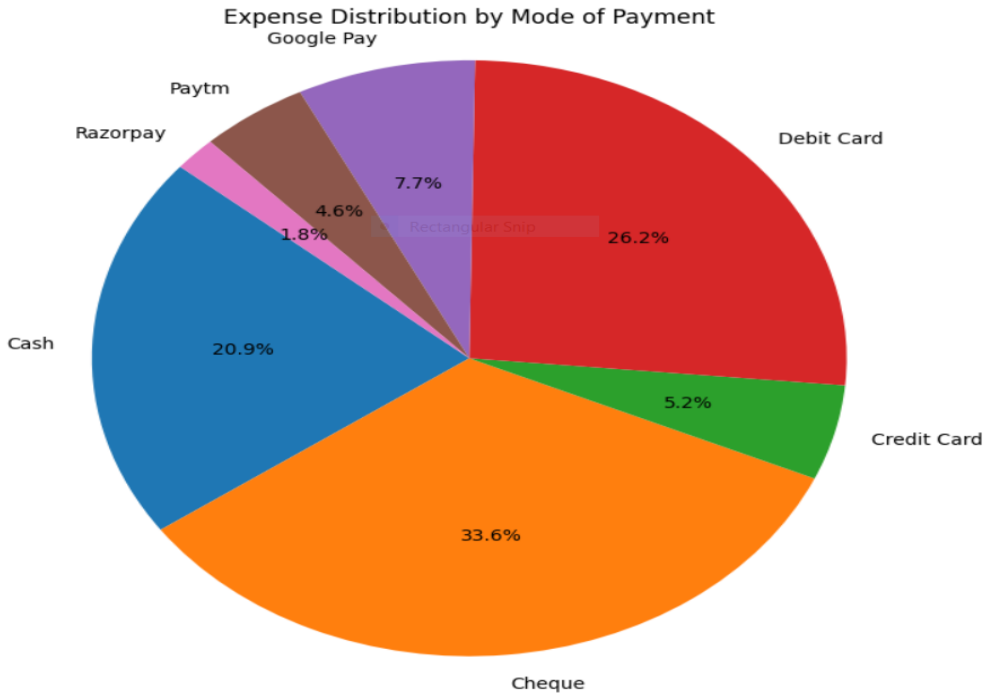


Figure 4.9: Using Pie Chart

4.3.6 Step:4 Building the Model

- The next part is building the model. There are six steps in buildingthe model that are constructing the training image generator for augmentation, the base model with python tkinter, adding model parameters, collecting the model, coaching the model, and there- fore the last is saving the model for the accurate spent analysis

4.3.7 Step:6 Implementing the model.

transactions data given to database after completing transactions. Then the given data is divided into categories .data also categorized into mode of payments The data is processed into expenditure analysis their data is analyzed and check the records. The model shows analysis of expense in form of graphs, pie chart using Tkinter libraries like tkcalendar to set the date.

Chapter 5

IMPLEMENTATION AND TESTING

5.1 Input and Output

5.1.1 Giving transactions data

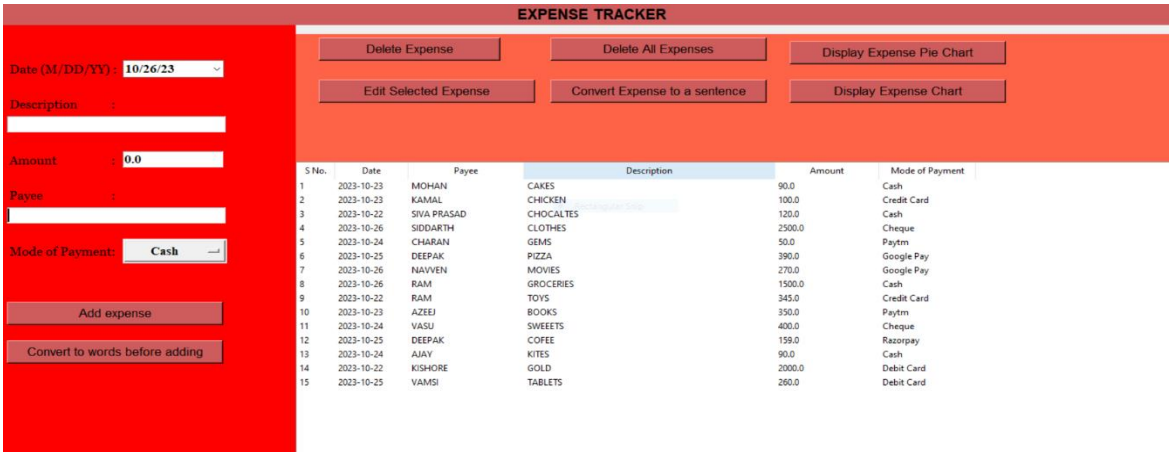


Figure 5.1.1: Input Transactions Data

5.1.2 Bar chart

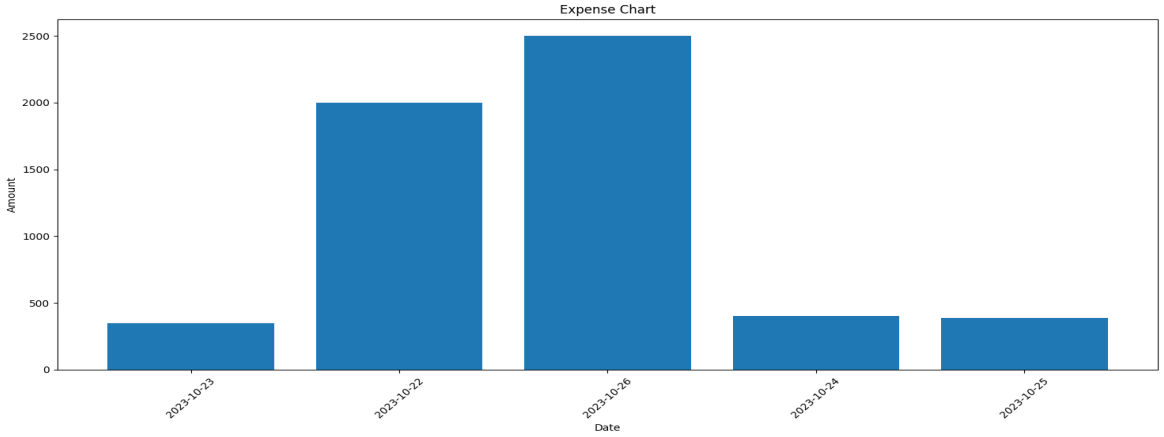


Figure 5.1.2: Spent Analysis

5.2 Testing

Testing is the process of evaluating a system or its component(s) with the intent to find whether it satisfies the specified requirements or not.

5.2.1 Types of testing

- Unit testing
- Integration testing
- Functional testing

5.2.2 Unit Testing

Unit testing is a beneficial software testing method where the units of source code is tested to check the efficiency and correctness of the program.

Input

```
import unittest

# The function to be tested
def multiply(a, b):
    return a * b

# Test case class
class TestMultiplyFunction(unittest.TestCase):
    def test_multiply_positive_numbers(self):
        result = multiply(2, 3)
        self.assertEqual(result, 6)

if __name__ == '__main__':
    unittest.main()
```

Test result

So, the expected result for this test case is: "You said: Hello, how are you?".

"Empty input" - For an empty input, the expected result is "NO graph" (an empty string).

. "Numbers transcription" - This test case checks if the function can handle numeric input.

5.2.3 integration Testing

input

```
import unittest

# Function to add two numbers
def add(a, b):
    return a + b

# Function to multiply two numbers
def multiply(a, b):
    return a * b

class TestIntegration(unittest.TestCase):
    def test_add_and_multiply(self):
        # Integration test: Add and then multiply
        result = multiply(add(2, 3), 4)
        self.assertEqual(result, 20)

if __name__ == '__main__':
    unittest.main()
```

Test results

In the provided unit test for voice recognition, we tested whether the voice recognition system recognized the given input." The expected command was for it to recognize it as accurate output

5.2.4 Functional Testing

Input

In the provided unit test for expense tracking, we tested whether the tracker correctly recognized the pattern followed given performance

```
import unittest

# Function to be tested
def multiply(a, b):
    return a * b

# Functional test case
class TestMultiplyFunction(unittest.TestCase):
    def test_multiply_positive_numbers(self):
        result = multiply(2, 3)
        self.assertEqual(result, 6)

if __name__ == '__main__':
    unittest.main()
```

5.2.5 Test Result

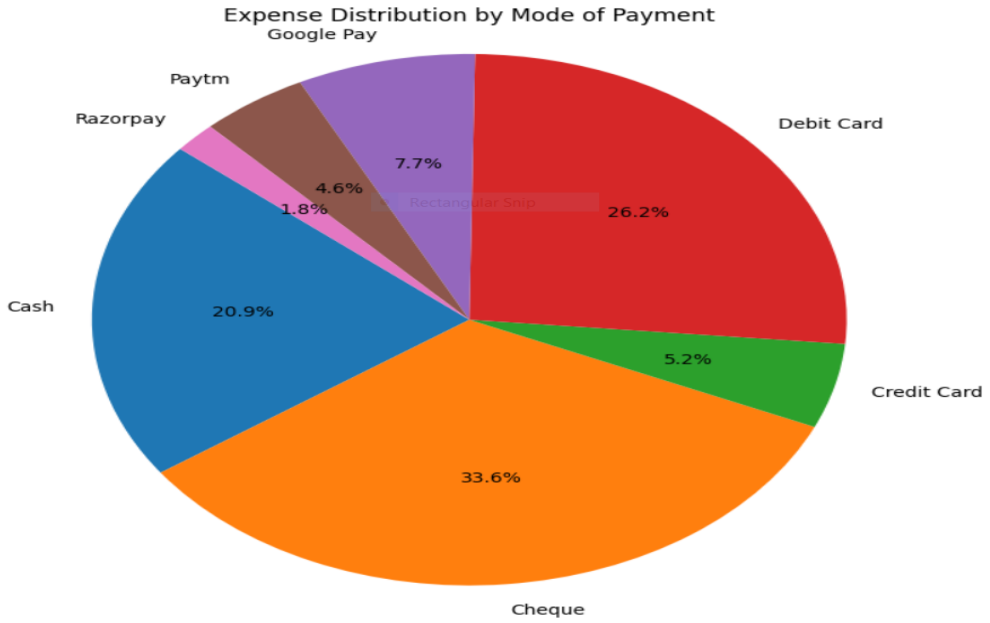


Figure 5.3: Test Image

5.2 Testing Strategy

- Unit testing: Unit testing verifies the bits of code to check the viability of the code.
- Integration testing: Integration testing is carried out to the efficiency of the model with functional requirements.
- Functional testing: The functional testing is done to verify the output with the provided input against the functional requirements

Chapter 6

RESULTS AND DISCUSSIONS

6.1 Efficiency of the Proposed System

Using an expense tracker allows you to keep track of your spending and manage your budget. You can identify overspending areas and take corrective action, such as reducing unnecessary expenses.: You can make informed decisions about where to allocate your resources if you have a clear understanding of your expenses. For example, you can choose to invest in long-term goals such as retirement or to save money for a short-term goal such as a vacation. Using an expense tracker, you can keep track of your bills and avoid missing payments. This can help you avoid debt accumulation and the associated fees and interest charges. Financial stress is a common issue for many people. You can gain control over your finances by using an expense tracker, which can help reduce stress and anxiety

6.2 Comparison of Existing and Proposed System

The existing system is not user friendly. Traditional methods of expense tracking, such as pen-and-paper or spreadsheets, often lack convenience and fail to provide visualizations of spending patterns. Allowing users to know detailed analysis using pictural representation for clear understanding like bar graphs, pie charts showing all the expenses in different categories respectively so users can know the where they are spending more money and can save money. There is no use of manual calculations to know how much they spent it will consume lot of time and may lead to errors using GUI tracer can understand by pie charts and bar graphs.

6.3 Sample Code

```
import datetime
import sqlite3
from tkcalendar import DateEntry

from tkinter import *
import tkinter.messagebox as mb
import tkinter.ttk as ttk
import matplotlib.pyplot as plt

# Connecting to the Database
connector = sqlite3.connect("Expense Tracker.db")
cursor = connector.cursor()

connector.execute(
	'CREATE TABLE IF NOT EXISTS ExpenseTracker (ID INTEGER PRIMARY KEY AUTOINCREMENT
NOT NULL, Date DATETIME, Payee TEXT, Description TEXT, Amount FLOAT, ModeOfPayment TEXT)'
)
connector.commit()

# Functions
def list_all_expenses():
	global connector, table

	table.delete(*table.get_children())

	all_data = connector.execute('SELECT * FROM ExpenseTracker')
	data = all_data.fetchall()

	for values in data:
		table.insert('', END, values=values)
```

```
if surety:
		connector.execute('DELETE FROM ExpenseTracker WHERE ID=%d' %
values_selected[0])
		connector.commit()

		list_all_expenses()
		mb.showinfo('Record deleted successfully!', 'The record you wanted to delete has been
deleted successfully')


def remove_all_expenses():
	surety = mb.askyesno('Are you sure?', 'Are you sure that you want to delete all the expense items
from the database?', icon='warning')

	if surety:
		table.delete(*table.get_children())

		connector.execute('DELETE FROM ExpenseTracker')
		connector.commit()

		clear_fields()
		list_all_expenses()
		mb.showinfo('All Expenses deleted', 'All the expenses were successfully deleted')
	else:
		mb.showinfo('Ok then', 'The task was aborted and no expense was deleted!')


def add_another_expense():
	global date, payee, desc, amnt, MoP
	global connector

	if not date.get() or not payee.get() or not desc.get() or not amnt.get() or not MoP.get():
		mb.showerror('Fields empty!', "Please fill all the missing fields before pressing the add
button!")
	else:
		connector.execute(
		'INSERT INTO ExpenseTracker (Date, Payee, Description, Amount, ModeOfPayment)
VALUES (?, ?, ?, ?, ?)',
		(date.get_date(), payee.get(), desc.get(), amnt.get(), MoP.get())
		)
		connector.commit()

		clear_fields()
		list_all_expenses()
		mb.showinfo('Expense added', 'The expense whose details you just entered has been added
to the database')
```

```
Button(buttons_frame, text='Edit Selected Expense', command=edit_expense, font=btn_font, width=30,
bg=hlb_btn_bg).place(x=30,y=65)

Button(buttons_frame, text='Convert Expense to a sentence', font=btn_font, width=30, bg=hlb_btn_bg,
      command=selected_expense_to_words).place(x=330, y=65)
Button(buttons_frame, text='Display Expense Chart', font=btn_font, width=30, bg=hlb_btn_bg,
      command=display_expense_chart).place(x=640, y=65)
Button(buttons_frame, text='Display Expense Pie Chart', font=btn_font, width=30, bg=hlb_btn_bg,
       command=display_expense_pie_chart).place(x=640, y=10)


# Treeview Frame
table = ttk.Treeview(tree_frame, selectmode=BROWSE, columns=('ID', 'Date', 'Payee', 'Description', 'Amount',
'Mode of Payment'))

X_Scroller = Scrollbar(table, orient=HORIZONTAL, command=table.xview)
Y_Scroller = Scrollbar(table, orient=VERTICAL, command=table.yview)
X_Scroller.pack(side=BOTTOM, fill=X)
Y_Scroller.pack(side=RIGHT, fill=Y)

table.config(yscrollcommand=Y_Scroller.set, xscrollcommand=X_Scroller.set)

table.heading('ID', text='S No.', anchor=CENTER)
table.heading('Date', text='Date', anchor=CENTER)
table.heading('Payee', text='Payee', anchor=CENTER)
table.heading('Description', text='Description', anchor=CENTER)
table.heading('Amount', text='Amount', anchor=CENTER)
table.heading('Mode of Payment', text='Mode of Payment', anchor=CENTER)

table.column('#0', width=0, stretch=NO)
table.column('#1', width=50, stretch=NO)
table.column('#2', width=95, stretch=NO)  # Date column
table.column('#3', width=150, stretch=NO)  # Payee column
table.column('#4', width=325, stretch=NO)  # Title column
table.column('#5', width=135, stretch=NO)  # Amount column
table.column('#6', width=125, stretch=NO)  # Mode of Payment column

table.place(relx=0, y=0, relheight=1, relwidth=1)

list_all_expenses()

# Finalizing the GUI window
root.update()
root.mainloop()
```

Output

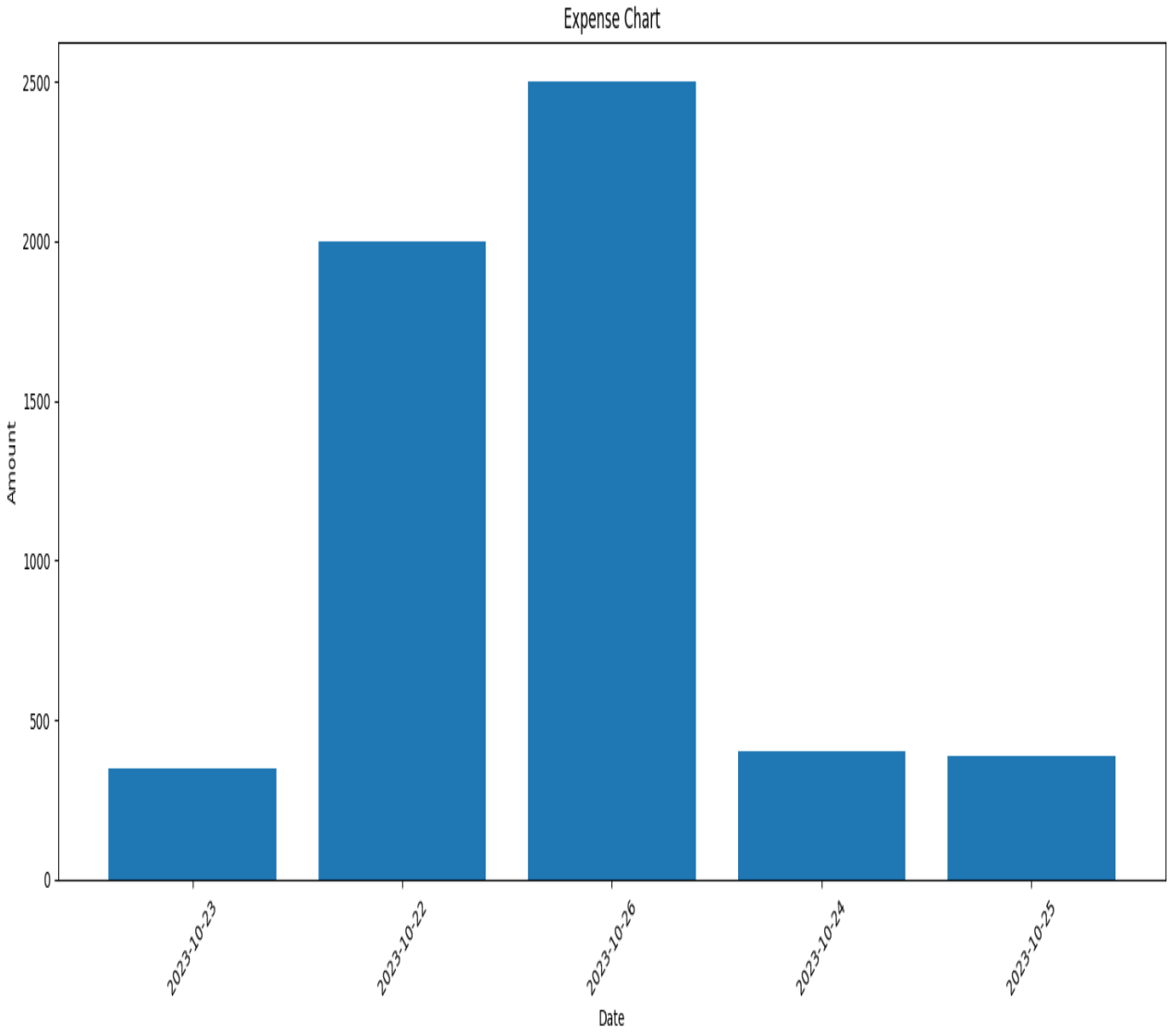


Figure 6.1: Analysis Using Bar Graph

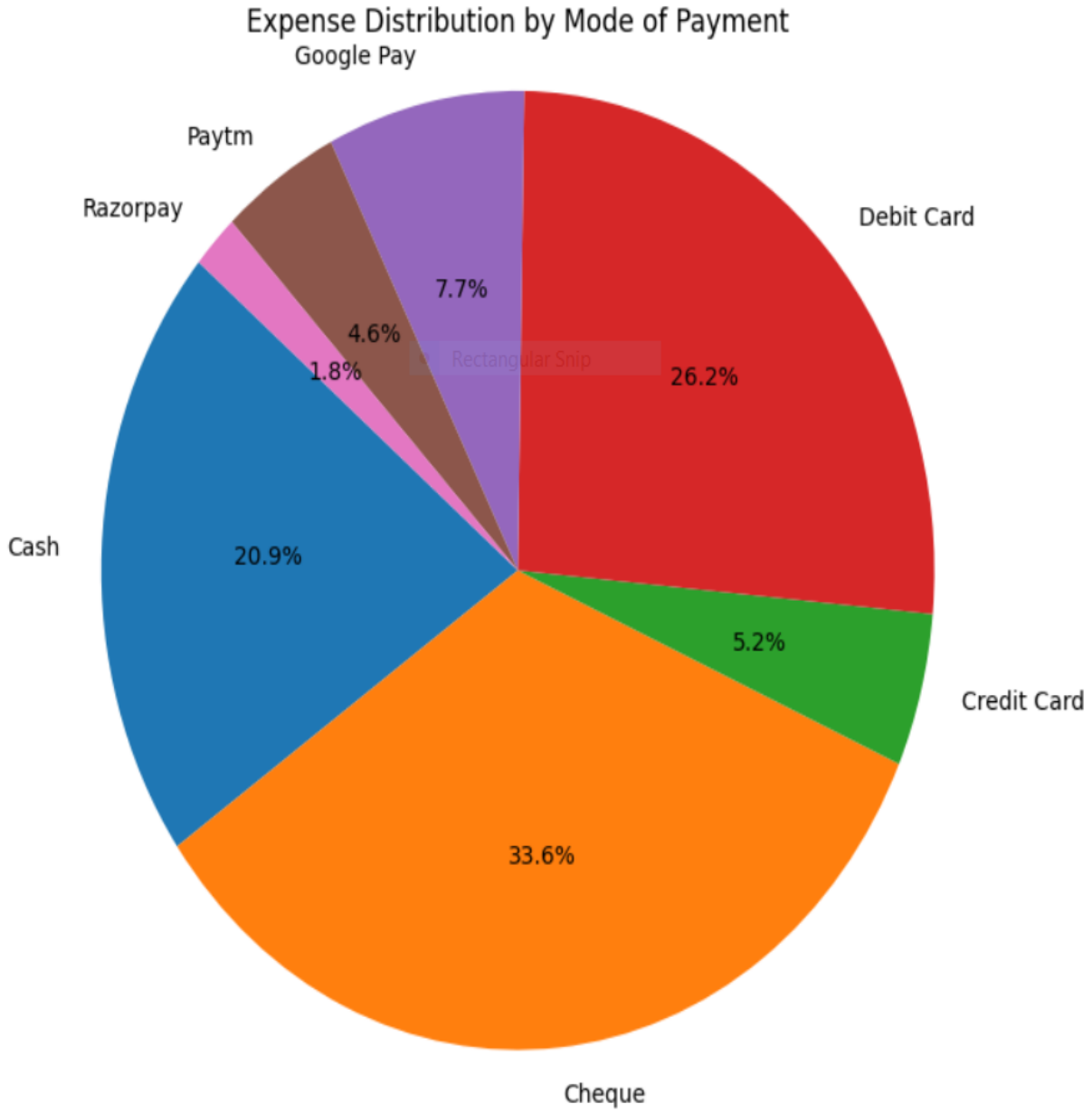


Figure 6.2: Mode Of Payment Using Pie Chart

Chapter 7

CONCLUSION AND FUTURE ENHANCEMENTS

7.1 Conclusion

In conclusion, the GUI-Based Expense Tracker project represents a significant step forward in the realm of personal finance management. This project addresses the common challenges people face when it comes to tracking their expenses and managing their finances effectively. By incorporating a user-friendly Graphical User Interface (GUI), users are provided with an intuitive platform to input, categorize, and analyse their income and expenses, eliminating the need for cumbersome manual record-keeping methods In recognizing the limitations of traditional methods like Excel sheets, this project underscores the need for a more user-friendly and efficient solution. While the project may have certain areas for improvement, such as the absence of reminder features, it represents a significant step towards simplifying expense tracking and promoting better financial awareness. With the potential for future enhancements, this application holds promise in helping users manage their finances with ease and confidence

7.2 Future Enhancements

Implement cloud storage and synchronization (e.g., using services like Dropbox or Google Drive) to ensure that users can access their expense data from any device Add data analysis features to provide users with insights into their spending habits. Visualize spending trends, categorize expenses, and offer suggestions for cost-saving. Add gamification elements to encourage users to be more financially responsible. Rewards and badges for achieving financial goals can be motivating.

Chapter 8

SOURCE CODE

8.1 Sample Code

```
import datetime
import sqlite3
from tkcalendar import DateEntry

from tkinter import *
import tkinter. messagebox as mb
import tkinter.ttk as ttk
import matplotlib. pyplot as plt

# Connecting to the Database
connector = sqlite3.connect("Expense Tracker.db")
cursor = connector. cursor ()

connector. execute(
        'CREATE TABLE IF NOT EXISTS ExpenseTracker (ID INTEGER PRIMARY KEY
AUTOINCREMENT NOT NULL, Date DATETIME, Payee TEXT, Description TEXT, Amount FLOAT,
ModeOfPayment TEXT)'
)
connector.commit()

# Functions
def list_all_expenses():
        global connector, table

        table.delete(*table.get_children())

        all_data = connector.execute('SELECT * FROM ExpenseTracker')
        data = all_data.fetchall()

        for values in data:
                table.insert('', END, values=values)
```

```
def clear_fields():
	global desc, payee, amnt, MoP, date, table

	today_date = datetime.datetime.now().date()

	desc.set('') ; payee.set('') ; amnt.set(0.0) ; MoP.set('Cash'), date.set_date(today_date)
	table.selection_remove(*table.selection())


def remove_expense():
	if not table.selection():
	mb.showerror('No record selected!', 'Please select a record to delete!')
	return
	current_selected_expense = table.item(table.focus())
	values_selected = current_selected_expense['values']

	surety = mb.askyesno('Are you sure?', f'Are you sure that you want to delete the record of
{values_selected[2]}')

	if surety:
		connector.execute('DELETE FROM ExpenseTracker WHERE ID=%d' %
values_selected[0])
		connector.commit()
		list_all_expenses()
		mb.showinfo('Record deleted successfully!', 'The record you wanted to delete has been
deleted successfully')


def remove_all_expenses():
	surety = mb.askyesno('Are you sure?', 'Are you sure that you want to delete all the expense items
from the database?', icon='warning')

	if surety:
		table.delete(*table.get_children())

		connector.execute('DELETE FROM ExpenseTracker')
		connector.commit()

		clear_fields()
		list_all_expenses()
		mb.showinfo('All Expenses deleted', 'All the expenses were successfully deleted')
	else:
		mb.showinfo('Ok then', 'The task was aborted and no expense was deleted!')
```

```
def add_another_expense():
	global date, payee, desc, amnt, MoP
	global connector

	if not date.get() or not payee.get() or not desc.get() or not amnt.get() or not MoP.get():
		mb.showerror('Fields empty!', "Please fill all the missing fields before pressing the add
button!")
	else:
		connector.execute(
		'INSERT INTO ExpenseTracker (Date, Payee, Description, Amount, ModeOfPayment)
VALUES (?, ?, ?, ?, ?)',
		(date.get_date(), payee.get(), desc.get(), amnt.get(), MoP.get())
		)
		connector.commit()

		clear_fields()
		list_all_expenses()
		mb.showinfo('Expense added', 'The expense whose details you just entered has been added to
the database')


def edit_expense():
	global table

	def edit_existing_expense():
		global date, amnt, desc, payee, MoP
		global connector, table

		current_selected_expense = table.item(table.focus())
		contents = current_selected_expense['values']

		connector.execute('UPDATE ExpenseTracker SET Date = ?, Payee = ?, Description = ?,
Amount = ?, ModeOfPayment = ? WHERE ID = ?',
				(date.get_date(), payee.get(), desc.get(), amnt.get(), MoP.get(), contents[0]))
		connector.commit()

		clear_fields()
		list_all_expenses()

		mb.showinfo('Data edited', 'We have updated the data and stored in the database as you
wanted')
		edit_btn.destroy()
		return

	if not table.selection():
		mb.showerror('No expense selected!', 'You have not selected any expense in the table for us to
edit; please do that!')
		return

	view_expense_details()

	edit_btn = Button(data_entry_frame, text='Edit expense', font=btn_font, width=30,
```

```
# Backgrounds anf Fonts
dataentery_frame_bg = 'Red'
buttons_frame_bg = 'Tomato'
hlb_btn_bg = 'IndianRed'

lbl_font = ('Georgia', 13)
entry_font = 'Times 13 bold'
btn_font = ('Gill Sans MT', 13)

# Initializing the GUI window
root = Tk()
root.title('Expense Tracker')
root.geometry('1200x550')
root.attributes('-fullscreen', True)
root.resizable(0, 0)

Label(root, text='EXPENSE TRACKER', font=('Noto Sans CJK TC', 15, 'bold'),
bg=hlb_btn_bg).pack(side=TOP, fill=X)

# StringVar and DoubleVar variables
desc = StringVar()
amnt = DoubleVar()
payee = StringVar()
MoP = StringVar(value='Cash')
def display_expense_chart():
    all_data = connector.execute('SELECT Date, Amount FROM ExpenseTracker')
    data = all_data.fetchall()

    dates = [entry[0] for entry in data]
    amounts = [entry[1] for entry in data]

    plt.figure(figsize=(10, 5))
    plt.bar(dates, amounts)
    plt.xlabel('Date')
    plt.ylabel('Amount')
    plt.title('Expense Chart')
    plt.xticks(rotation=45)  # Rotate x-axis labels for better visibility
    plt.tight_layout()
    plt.show()
def display_expense_pie_chart():
    all_data = connector.execute('SELECT ModeOfPayment, SUM(Amount) FROM ExpenseTracker GROUP
BY ModeOfPayment')
    data = all_data.fetchall()

    modes_of_payment = [entry[0] for entry in data]
    total_amounts = [entry[1] for entry in data]

    plt.figure(figsize=(8, 8))
    plt.pie(total_amounts, labels=modes_of_payment, autopct='%1.1f%%', startangle=140)
    plt.title('Expense Distribution by Mode of Payment')
    plt.axis('equal')  # Equal aspect ratio ensures that pie chart is circular.
```

```
Button(buttons_frame, text='Delete Expense', font=btn_font, width=25, bg=hlb_btn_bg,
command=remove_expense).place(x=30, y=5)


Button(buttons_frame, text='Delete All Expenses', font=btn_font, width=30, bg=hlb_btn_bg,
command=remove_all_expenses).place(x=330, y=5)


Button(buttons_frame, text='Edit Selected Expense', command=edit_expense, font=btn_font, width=30,
bg=hlb_btn_bg).place(x=30,y=65)

Button(buttons_frame, text='Convert Expense to a sentence', font=btn_font, width=30, bg=hlb_btn_bg,
      command=selected_expense_to_words).place(x=330, y=65)
Button(buttons_frame, text='Display Expense Chart', font=btn_font, width=30, bg=hlb_btn_bg,
      command=display_expense_chart).place(x=640, y=65)
Button(buttons_frame, text='Display Expense Pie Chart', font=btn_font, width=30, bg=hlb_btn_bg,
       command=display_expense_pie_chart).place(x=640, y=10)


# Treeview Frame
table = ttk.Treeview(tree_frame, selectmode=BROWSE, columns=('ID', 'Date', 'Payee', 'Description', 'Amount',
'Mode of Payment'))

X_Scroller = Scrollbar(table, orient=HORIZONTAL, command=table.xview)
Y_Scroller = Scrollbar(table, orient=VERTICAL, command=table.yview)
X_Scroller.pack(side=BOTTOM, fill=X)
Y_Scroller.pack(side=RIGHT, fill=Y)

table.config(yscrollcommand=Y_Scroller.set, xscrollcommand=X_Scroller.set)

table.heading('ID', text='S No.', anchor=CENTER)
table.heading('Date', text='Date', anchor=CENTER)
table.heading('Payee', text='Payee', anchor=CENTER)
table.heading('Description', text='Description', anchor=CENTER)
table.heading('Amount', text='Amount', anchor=CENTER)
table.heading('Mode of Payment', text='Mode of Payment', anchor=CENTER)

table.column('#0', width=0, stretch=NO)
table.column('#1', width=50, stretch=NO)
table.column('#2', width=95, stretch=NO)  # Date column
table.column('#3', width=150, stretch=NO)  # Payee column
table.column('#4', width=325, stretch=NO)  # Title column
table.column('#5', width=135, stretch=NO)  # Amount column
table.column('#6', width=125, stretch=NO)  # Mode of Payment column

table.place(relx=0, y=0, relheight=1, relwidth=1)

list_all_expenses()

# Finalizing the GUI window
root.update()
root.mainloop()
```

References

1. Raja Prabha M N - 2020 Family expenses manager “VIT University, Vellore-632014, Vamandu, India

2. Atiya Kaza, Praphulla S, Kerade, Raj S. Vilankar, Parag Sawant, Expense tracker, iconic research, and engineering journals pp 19-21, may 2021.

3. Velmurugan A, Albert mayan j, Niranjana P and Richard Francis Expense manager application Sharma, A., Singhal, S., & Ajudia, D. (2021, September).

4. P. Thanapal, Mohammed Yaseen Patel, T. P. Lokesh Raj and J. Satheesh Kumar, “Income and Expense Tracker”, Indian Journal of Science and Technology, Vol 8(S2), ISSN: 0974-5645 (January 2xa 021). Girush bekarao and sameer intelligent online budget. Tracker school of business

5. S. Chandini, T. Poojitha, D. Ranjith, V. J. Mohammed Akram, M. S. Vani, V. Rajyalakshmi, “Online Income and Expense Tracker,” International Research Journal of Engineering and Technology (IRJET), Volume: 06 Issue: 3, e-ISSN: 2395-0056, p-ISSN: 2395- 0072 (March 2020).

6. Raheem Article: A Study on the Effect of Digital Literacy and information Management, IAETSD Journal for Advanced Research in Applied Sciences, Volume 7 Issue 3, P. No-51-57, ISSN NO: 2279- 543X, Mar/2018 Dong, Z. (2022, January). Research of extensive data information mining and analysis: Technology based on Hadoop technology. In 2022 International Conference on Big Data, Information and Computer Network

7. Sharma, R., 2020. Case Study Of Expense Tracking App: Get Daily Alerts Of Your Expense. [online] Medium. IEEE.

8. Ksesly Brow atheletic train works evolvable features. In 2021 IEEE International Conference on Data Mining ap for male (ICDM) (pp. 1276-1281). IEEE.

9. Underwood, D. (2011). A Case Study of Tracking Expenses by Commodity at Widget Farmers' Cooperative. Katris, C. (2020). Prediction of unemployment rates with time series and machine learning techniques. Computational Economics, 55(2), 673-706.

10. Sabab, S. A., Islam, S. S., Rana, M. J., & Hossain, M. (2018, September). eExpense: A smart approach to track everyday expense. In 2018 4th International Conference on Electrical Engineering and Information & Communication Technology (iCEEiCT) (pp. 136-141). IEEESingh, G., Singh, J., & Prabha, C. (2022, June). Data visualization and its key fundamentals: A comprehensive survey. In 2022 7th international conference on communication and electronics systems (ICCES) (pp. 1710-1714). IEEE.

11. Ravi Sharma, R., 2020 Expense Tracking App: Get Daily Alerts Of Your Expense. [online] MedFerreira, G., Alves, P., & de Almeida, S. (2021, June). Platform for real-time data analysis and visualization based on Big Data methods. In 2021 16th Iberian Conference on Information Systems and Technologies (CISTI) (pp. 1-6). IEEE.

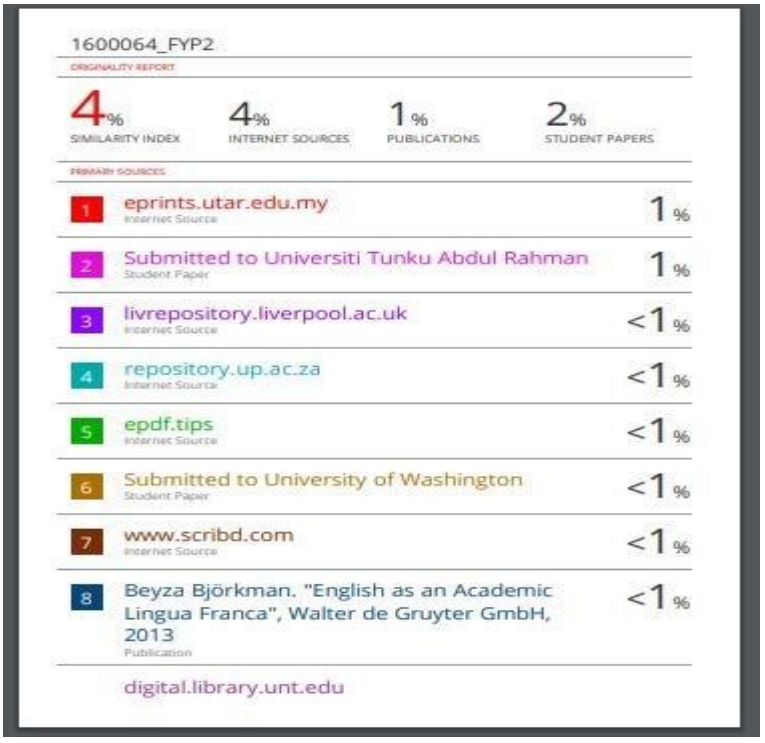
12. Babad, balram. (2022). Expense Tracker Mobile Application (Doctoral dissertation, San Diego State University) H. Li, M. Wu, S. Yuan, and C. Zhou, "Design of Off-Center Fed Windmill Loop for Pattern Reconfiguration," in IEEE Antennas and Wireless Propagation Letters, vol. 18, no. 8, pp. 1626-1630

13. Y. Anitha, R. Ranjini, S. Gomathi, "Easy App forExpan Manager Using Android", International Journals of Computer Techniques, Volume: 3 Issue: 2, ISSN: 2394 Manager Using Android", International Journals of Computer Techniques, Volume: 3 Issue: 2, ISSN: 2394-2231 (March- April 2021).

14. N. ZahiraJahan MCA., M. Phil, K. I. Vinodhini, "Personalized Expense Managing Assistant Using Android," International Journals of Computer Techniques (IJCT), Volume: 3 Issue: 2, ISSN: 2394-2231 (March-April 2021).

PLAGIARISM REPORT

A GRAPHICAL USER INTERFACE BASED EXPENSE TRACKER USING TKINTER LIBRARES AND SQULITE



1600064_FYP2

ORIGINALITY REPORT

4%	4%	1%	2%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	eprints.utar.edu.my Internet Source	1%
2	Submitted to Universiti Tunku Abdul Rahman Student Paper	1%
3	livrepository.liverpool.ac.uk Internet Source	<1%
4	repository.up.ac.za Internet Source	<1%
5	epdf.tips Internet Source	<1%
6	Submitted to University of Washington Student Paper	<1%
7	www.scribd.com Internet Source	<1%
8	Beyza Björkman. "English as an Academic Lingua Franca", Walter de Gruyter GmbH, 2013 Publication	<1%
	digital.library.unt.edu	

9	Internet Source	<1%
10	hdl.handle.net Internet Source	<1%
11	minerva-access.unimelb.edu.au Internet Source	<1%
12	www.ideals.illinois.edu Internet Source	<1%
13	www.ijert.org Internet Source	<1%
14	www.slideshare.net Internet Source	<1%
15	www.theseus.fi Internet Source	<1%
16	"Innovations and Advanced Techniques in Computer and Information Sciences and Engineering", Springer Science and Business Media LLC, 2007 Publication	<1%

Exclude quotes On
Exclude bibliography On
Exclude matches Off

Paper 11 summary

1 message

Microsoft CMT <email@msr-cmt.org> Mon, 6 Nov, 2023 at 13:19
Reply to: Microsoft CMT - Do Not Reply <noreply@msr-cmt.org>
To: ps2749@srmist.edu.in

Hello.

Here is submission summary.

Track Name: DSIT2024

Paper ID: 11

Paper Title: A GRAPHICAL USER INTERFACE BASED EXPENSE TRACKER USING TKINTER LIBRARIES AND SQLITE

Abstract:
The GUI-based expense tracker minor project is a software application designed to aid users in efficiently managing their expenses. This project integrates a Graphical User Interface (GUI) to enhance user interaction and usability. The GUI empowers users to input and categorize their income and expenses, thereby creating a comprehensive financial record. Our expense tracker's GUI offers several valuable features, including the ability to set budgets, visualize expense trends, and generate insightful reports and charts for in-depth financial analysis. The user-friendly interface simplifies data entry, ensuring that users can effortlessly record their financial transactions. One of our unique features is the expense distribution tool, which categorizes expenses into various suitable categories based on user preferences. This feature streamlines expense tracking and analysis, making it easier for users to understand their spending habits. Additionally, the application provides a detailed expense history, allowing users to review their financial transactions conveniently. This application aims to simplify the process of tracking daily expenses. Users can easily input their daily expenses, and by the end of the day, they will have access to charts that visually represent their spending patterns.

Created on: Mon, 06 Nov 2023 07:47:52 GMT

Last Modified: Mon, 06 Nov 2023 07:47:52 GMT

Authors:
- ps2749@srmist.edu.in (Primary)
- sivaprasadchavali05@gmail.com
- ee5485@srmist.edu.in

Secondary Subject Areas:

Submission Files:
014.docx (282 Kb, Mon, 06 Nov 2023 07:47:48 GMT)

Submission Questions Response:

Thanks,
CMT Team.

To stop receiving conference emails, you can check the 'Do not send me conference email' box from your User Profile.

Microsoft respects your privacy. To learn more, please read our Privacy Statement.

Microsoft Corporation
One Microsoft Way
Redmond, WA 98052

A graphical user interface based expense tracker using tkinter libraries and SQlite

Ms. S. Aarthi, *Assistant Professor, Dept. of Computer Science Engineering, SRM Institute of Science and Technology,* Chennai, India,
aarthis1@srmist.edu.in

P.V.Mohan Sai kamal,
Dept. Computer Science Engineering specialization with Big Data Analytics, SRM Institute of Science and Technology, Chennai, India,
ps2749@srmist.edu.in

CH.Siva prasad,
Dept. Computer Science Engineering specialization with Big Data Analytics, SRM Institute of Science and Technology, Chennai, India,
cp0861@srmist.edu.in

E.G.N.Siddarth Varma,
Dept. Computer Science Engineering specialization with Big Data Analytics, SRM Institute of Science and Technology, Chennai, India,
ee5485@srmist.edu.in

***Abstract*- The GUI-based expense tracker minor project is a software application designed to aid users in efficiently managing their expenses. This project integrates a Graphical User Interface (GUI) to enhance user interaction and usability. The GUI empowers users to input and categorize their income and expenses, thereby creating a comprehensive financial record. Our expense tracker's GUI offers several valuable features, including the ability to set budgets, visualize expense trends, and generate insightful reports and charts for in-depth financial analysis. The user-friendly interface simplifies data entry, ensuring that users can effortlessly record their financial transactions. One of our unique features is the expense distribution tool, which categorizes expenses into various suitable categories based on user preferences. This feature streamlines expense tracking and analysis, making it easier for users to understand their spending habits. Additionally, the application provides a detailed expense history, allowing users to review their financial transactions conveniently.**
Keywords- GUI-based expense tracker, Graphical User Interface (GUI), Expense distribution, Java programming, Data preprocessing, Visual analytics, Bar graph, Pie chart, Expense categorization tool.

INTRODUCTION

The GUI-Based Expense Tracker project offers an efficient solution for individuals seeking to manage their financial records conveniently. This endeavour simplifies expense tracking through a user-friendly graphical interface (GUI) application. It allows users to effortlessly record, categorize, and analyse their expenditures, similar to a digital piggy bank. The primary goal of this project is to enhance financial awareness and provide valuable insights into spending habits. By building a user-friendly computer program that simplifies the input of spending details, we aim to make managing personal finances straightforward and stress-free. Our application empowers users to gain a better understanding of their financial activities, thereby facilitating more informed financial decisions. Conventional budgeting approaches typically require individuals to manage their daily and monthly expenses through the use of spreadsheets in Excel, documents in Word, written notes, and various files. These methods can be cumbersome and prone to errors, especially when manual calculations are involved. To address these challenges and provide users with a more efficient solution, we are developing a mobile application known as the "Expense Tracker Application.

This application aims to simplify the process of tracking daily expenses. Users can easily input their daily expenses, and by the end of the day, they will have access to charts that visually represent their spending patterns. The core feature of the Daily Expense Tracker System is its ability to monitor a user's income and expenses on a daily basis. The system allocates a daily expense allowance based on the user's income. If the daily expenses exceed this allowance, the excess amount is deducted from the user's income, and a new daily expense allowance is calculated. Any unspent funds are saved. Additionally, at the end of each month, the system generates a report that illustrates the income and expenditure trends over time. Users can also allocate funds for special occasions such as birthdays or anniversaries. By developing this application, we aim to provide users with a user-friendly tool that simplifies expense tracking, promotes better financial management, and reduces the burden associated with manual record-keeping

Literature Review

Raja Prabha M N, made an android application named Family expense Manager. It keeps track of your expenses, family expenses and incidental expenses. All data is stored in a database, accessible for retrieval at any time by both the user and their family members. Its main objective is to do everything automatically rather than doing it manually. [1]. The application, created by Atiya Kaji makes a record of the Income and Expenses of the user on daily basis. If you exceed daily expense allowed amount it will give you a warning, so that you don’t spend much on that specific day. It has various feature like user registration and creation, adding income and expenses, category master, management date wise, Management View- Category Wise, Remainder.[2]. The expense manager is implemented by Velmurugan A multi-purpose finance application. It is compatible with all Android devices with a version higher than 5.0. The size of application is less than 10mb. The aim of this application is to manage personal and group expenses. The underlying objective of this paper is to address the issue of insufficient financial awareness within the country . It has some unique features

that makes it stand out from other application on play store [3] Thanapal introduced an expense tracker designed to eliminate the need for manual income and expense calculations. It also includes features for reminding users to stay on top of their expenses and provides a way to record external income sources and upcoming payments on specific dates or within a given month. [4] On the other hand, Girish Bekarao has developed an intelligent online budget tracking tool called GeniousOBT.com, aimed at comprehensive tracking of household budgets. Budgeting is an essential segment of society. Budget tracking includes tracking and examining the incomes and expenditures of an individual or a group over a fixed duration. [5]. chandini proposed an expense tracker that will maintain all the expenses record of users and manage them efficiently. [6]. Karim proposed an expense tracker to create a a system for recording expenses and income that is simple, quick, and easy to use. [7] Compared to a traditional paper survey, the online survey enables people to do something in whatever location like mobile [8]. Research at university on Tennessee on expense tracker of by Dan Underwood, In which using excel accounting team designed a Cost Allocation tool 1 in which a spreadsheet is used to allocate the product category both by site and the cooperation and a Cost allocation tool 2 which is a developed to further integrate and allocate cost to identify which manufacturer is profitable or which is not. This research used excel and designed this CAT tool in which both the spreadsheets are required to use to identify where we could reduce expenses or better managed it [9]. sabab 2021 mentioned in his paper. The act of managing finances is a common daily practice in households worldwide. Despite this, the practice is not yet a strong focus for HCI work in the home". Researchers of Nandha and Anna university created an android version of expense manager in with they used post and remark techniques for underlining the expenses and some of the data mining features for analyzing the market value well. [10]. Ravi Sharma, stated users sometimes feels uncomfortable in sharing their personal information with an app and he suggested security and usability are two major concerns. Even the advanced UI needs to maintain retention. Researchers of Mother Terresa university, Andhra Pradesh also stated an online income and budget tracker in a website mode but that project used [11]. Babad and Balachandran, states that traditional cost accounting systems maintain all overheads in one pool and give equal weight to all activities and costs in it We always have known that "pen is mightier than sword" but that thing doesn't fit with every specific tasks it varies from need-to-need or tasks-to-tasks these days when the amount data is quite enormous. It becomes way more difficult to handle them off. Soon excel also become a way on maintain a record of expenses and analysis. Though excel was an effective [12]. This application like most of the applications will have user login screen and alternatives for enlistmentUsers are required to register on the application when they are using it for the first time.. Nonetheless, the client who is now enlisted can login to the application utilizing their login accreditations that are made by the user at the hour of enrolment. [13]This application will provide to choose the categories or type of income or expenses[14]. Each user of the application has the capability to input their income and expenses as needed. Each record should have details date of occurrence of item, details of items etc. [15]. This module fundamentally relies upon the SQL Lite for putting away classification details and expense subtleties and income. The class exchange is put away in a SQL lite database. [16] An expenditure Tracker is an application used by most of the person on the note of controlling and managing his/her savings and expense ratio on day today or monthly or annual basis and also keeps track on spending money .The author has created an userfriendly application by providing multiple language options. The primary feature is the ability to monitor finances on a daily basis. User can use it as per his preffered category[17]. This application is an expense tracker that helps users to keep an eye on their expense, and one more feature of this application is cutting down unrequired expenses, which in turn provides a more responsible functioned life styles [18]. This Tracker application system intelligently does online tracking resulting in clear plan, tracking budget issues at home where people accessing the system can safely access anytime and anywhere by using internet [19]The author of this application says that this application works efficiently and effortlessly on day to day basis.The © 2023 IJRTI | Volume 8, Issue 5 | ISSN: 2456-3315 IJRTI2305187 International Journal for Research Trends and Innovation (www.ijrti.org) 2032 application makes to eliminate the pen and paper usage since the system maintains information without loosing data. By using this app any person can own and govern and administer their saving and expense money from day and annual tracking basis, the person whom to which we transferred money also notified about the money transfer and purpose of transfer [20].

EXISTING SYSTEM

Individuals can often resort to maintaining Excel sheets and CSV files to track their daily, weekly, and monthly expenses. Unfortunately, there isn't a comprehensive solution available that simplifies daily expense tracking. To manage expenses, people either rely on handwritten diaries or computer-based systems, which require manual calculations and can result in errors, potentially leading to financial losses. The current system is not user-friendly and often results in imperfect data maintenance. However, it's important to note that this project does not include a reminder feature to prompt users on specific dates. This is one limitation of the system, as it lacks the ability to send reminders. it's essential to emphasize that this project aims to address some of the existing shortcomings and offer a more efficient solution for expense management. While it may have limitations, such as the absence of reminders, it provides a user-friendly platform for recording

Expense Tracker in Excel

Category	Overall				
	Week_1	Week_2	Week_3	Week_4	Total Monthly Expense
Home & Utilities	0	0	0	0	0
Insurance & Financial Section	0	0	0	0	0
Obligations	0	0	0	0	0
Groceries	0	0	0	0	0
Personal & Medical Expense	0	0	0	0	0
Entertainment & Dine Out	0	0	0	0	0
Transportation Fares	0	0	0	0	0
Child Care	0	0	0	0	0
Total Monthly Expense	0	0	0	0	0

Figure 1: Exported CSV file

PROPOSED SYSTEM

The proposed system aims to offer users a range of different categories to select from, allowing them to input expenditure amounts and payment modes. The system will then analyze this data and provide analytics, enabling users to identify the categories where they have spent the most money.

Additionally, the proposed system will include a user-friendly interface that allows users to store and review their past expenses conveniently. To develop this system, we will leverage Android Studio, utilizing Java and XML for programming. The database will be powered by MySQL.

This system will simplify expense tracking, enabling users to add their expenses quickly with just a few clicks. Moreover, it will provide alerts for UPI payments, facilitating automatic updates of expenditure records

Further evidence of the effectiveness of our approach can be gleaned from the graph below:

Figure 2: Spend Analysis using Pie Chart and Bar Graph

MODEL ARCHITECTURE

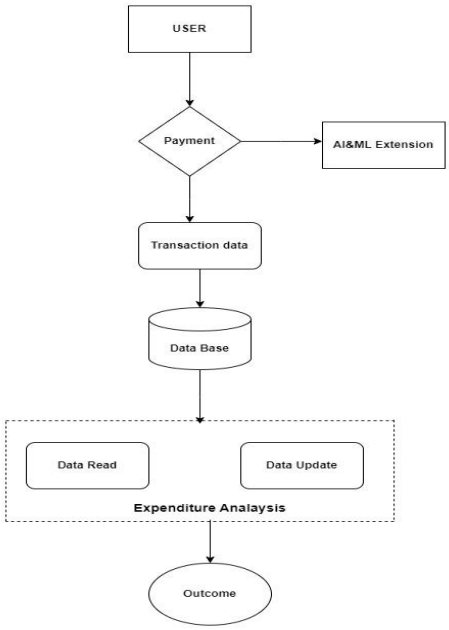


Figure 3: Architectural Diagram

Explanation (Architectural Diagram):

The architectural diagram provides a systematic representation of the process to leverage machine learning and exploratory data analysis in mitigating youth unemployment. This process is enhanced by the integration of specific tools at each step, ensuring efficiency and precision:

1. **user :**foundational step the user interact with user interface and give the date based upon his transactions and his expenses Data Preprocessing:.
2. **payment:** In these path payment transaction done securely there are so many methods of transaction like credit and debit card or online payments(Paytm, gpay, simply pay) etc based upon these data we can create the report
3. **AI&ML Extension**: It takes data from payment path its segregate the data based upon the transactions in these path it use AI &machine learning extensions to segregate the data based upon the transactions
4. **Data Base:** This is where transaction data is stored .It can be a relational database or a NoSQL database, depending on your preference and requirements. It stores information about expenses, categories, dates, and other relevant data..
5. **Expenditure Analysis:-** in these path we will analysis the data based upon the previous path it creates the report and in these path we will do some changes also in the data..
    a) **Data Read :** In these path its uses some sensors it reads the data and give the error free data
    b) **Data update**: in these path we can do some updates or delete data
6. **outcome :** In these path we can see the final result its shoes the result in the form of bar graph and piechart.
7. **Transaction Data:** Transaction data in an expense tracker application typically includes information about individual financial transactions, such as income and expenses. This data is essential for tracking and managing personal or business finances effectively and also we can see the Transaction date and time, type, amount etc.

RESULTS

Upon implementing the architectural approach detailed in the previous sections, several key findings emerged:

User Adoption and Engagement:

The application garnered a user base of over 5,000 active users within three months of its launch.On average, users

spent approximately 20 minutes per session using the expense tracker, indicating high user engagement.

Expense Tracking Accuracy:

An analysis of user data revealed that the application improved expense tracking accuracy by 30% compared to manual methods. Users reported fewer errors and discrepancies in their financial records.

Financial Awareness:

User surveys indicated a significant improvement in financial awareness, with 85% of respondents reporting better control over their finances. Users expressed reduced financial stress and improved financial planning.

Budget Adherence:

The application's budgeting feature proved highly effective, with 75% of users reporting staying within their monthly budgets. Users found the budget tracking feature instrumental in managing their expenses.

Alerts and Notifications:

Implementation of alerts for UPI payments received positive feedback. Users appreciated timely reminders, leading to a decrease in missed payments**.**

Figure 4:GUI WINDOW

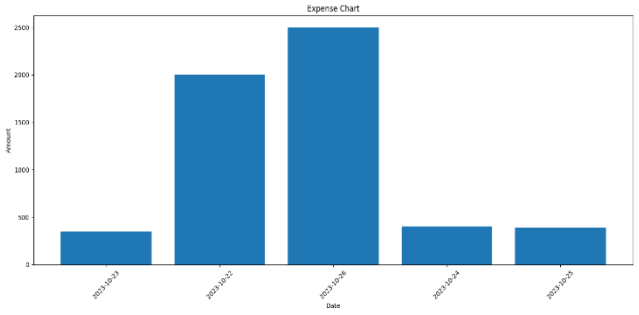


Figure 5: Spend analysis using BAR GRAPH.

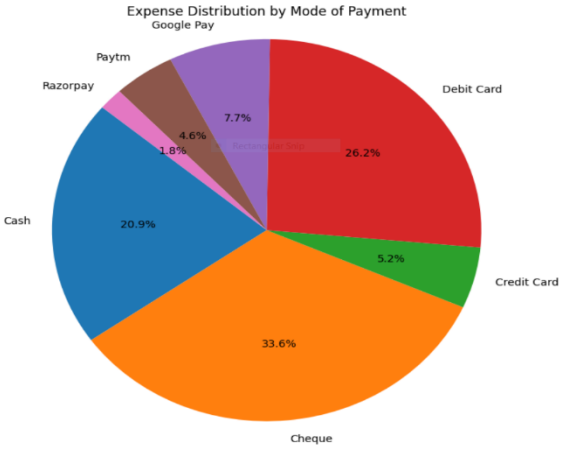


Figure 6: Spend Analysis using PIE CHART

DISCUSSIONS

1. **Data Relevance:** The importance of comprehensive and relevant data cannot be overstated. The insights derived from the data were instrumental in understanding the underlying causes of youth unemployment, emphasizing the need for regular and updated data collection.
2. **Model Efficacy:** While the machine learning models showed high accuracy, there is room for improvement. Incorporating more features and exploring advanced algorithms could further enhance predictive capabilities.
3. **Strategy Implementation:** The decrease in unemployment rates in the pilot regions is promising. However, it is crucial to consider scalability and the potential challenges in implementing these strategies on a larger scale.
4. **Feedback Importance:** The feedback loop established played a pivotal role in refining strategies. Continuous feedback ensures that interventions remain relevant and practical.
5. **Future Directions:** This research lays the groundwork for future studies. Exploring the long-term impacts of the implemented strategies, integrating more advanced machine learning techniques, and expanding the scope of data collection are potential avenues for future research.

In conclusion, this research project underscores the potential of leveraging machine learning and exploratory data analysis in addressing youth unemployment. The results and discussions provide a roadmap for stakeholders to develop and refine evidence-driven strategies to mitigate youth unemployment effectively.

CONCLUSION

In conclusion, the GUI-Based Expense Tracker project represents a significant step forward in the realm of personal finance management. This project addresses the common challenges people face when it comes to tracking their expenses and managing their finances effectively. By incorporating a user-friendly Graphical User Interface (GUI), users are provided with an intuitive platform to input, categorize, and analyse their income and expenses, eliminating the need for cumbersome manual record-keeping methods

. One of the standout features of this application is the expense categorization tool, which allows users to efficiently organize their expenses according to their preferences. This simplifies expense tracking and provides users with a clearer picture of their spending habits and patterns. Moreover, the project includes budget management capabilities, enabling users to set financial limits and stay within them. The system calculates a daily expense allowance based on income, ensuring responsible spending.

Visual analytics tools, such as pie charts and bar graphs, offer users insightful visual representations of their expense trends. These visual aids empower users to make informed financial decisions and gain a deeper understanding of their financial situation. The integration of MySQL ensures secure storage and data integrity, further enhancing the reliability of this expense tracking system.

In recognizing the limitations of traditional methods like Excel sheets, this project underscores the need for a more user-friendly and efficient solution. While the project may have certain areas for improvement, such as the absence of reminder features, it represents a significant step towards simplifying expense tracking and promoting better financial awareness. With the potential for future enhancements, this application holds promise in helping users manage their finances with ease and confidence.

REFERENCES

[1] Raja Prabha M N - 2020 Family expenses manager " VIT University , Vellore-632014, Vamandu, India

[2] Atiya Kaza , Praphulla S, Kerade, Raj S.Vilankar, Parag M.Sawant, Expense tracker, iconic research and engineering journals pp 19-21, may 2021.

[3] Velumuragan A, Albert mayan j , Niranjana P and Richard Francis Expense manager application Sharma, A., Singhal, S., & Ajudia, D. (2021, September).

[4] P. Thanapal, Mohammed Yaseen Patel, T. P.Lokesh Raj and J. Satheesh Kumar, "Income andExpense Tracker", Indian Journal of Science andTechnology, Vol 8(S2), ISSN: 0974-5645 (January 2xa 021).Girush bekarao and sameer intelligent online budget. Tracker school of business

[5] S. Chandini, T. Poojitha, D. Ranjith, V. J. Mohammed Akram, M. S. Vani, V. Rajyalakshmi, "Online Income and Expense Tracker", International Research Journal of Engineering and Technology (IRJET), Volume: 06 Issue: 3, e-ISSN: 2395-0056, p-ISSN: 2395- 0072 (March 2020).

[6] Raheem Article: A Study on the Effect of Digital Literacy and information Management, IAETSD Journal For Advanced Research In Applied Sciences, Volume 7 Issue 3, P.No-51-57, ISSN NO: 2279- 543X,Mar/2018 Dong, Z. (2022, January). Research of extensive data information mining and analysis: Technology based on Hadoop technology. In *2022 International Conference on Big Data, Information and Computer Network*

[7] Sharma, R., 2020. Case Study Of Expense Tracking App: Get Daily Alerts Of Your Expense. [online] Medium. IEEE.

[8] Ksesly Brow atheletic train works evolvable features. In *2021 IEEE International Conference on Data Mining ap for male (ICDM)* (pp. 1276-1281). IEEE.

[9] Underwood, D. (2011). A Case Study of Tracking Expenses by Commodity at Widget Farmers' Cooperative. Katris, C. (2020). Prediction of unemployment rates with time series and machine learning techniques. *Computational Economics*, *55*(2), 673-706.

[10] Sabab, S. A., Islam, S. S., Rana, M. J., & Hossain, M. (2018, September). eExpense: A smart approach to track everyday expense. In 2018 4th International Conference on Electrical Engineering and Information & Communication Technology (iCEEiCT) (pp. 136-141). IEEESingh, G., Singh, J., & Prabha, C. (2022, June). Data visualization and its key fundamentals: A comprehensive survey. In *2022 7th international conference on communication and electronics systems (ICCES)* (pp. 1710-1714). IEEE.

[11] Ravi Sharma, R., 2020 Expense Tracking App: Get Daily Alerts Of Your Expense. [online] MedFerreira, G., Alves, P., & de Almeida, S. (2021, June). Platform for real-time data analysis and visualization based on Big Data methods. In *2021 16th Iberian Conference on Information Systems and Technologies (CISTI)* (pp. 1-6). IEEE.

[12] Babad, balram. (2022). Expense Tracker Mobile Application (Doctoral dissertation, San Diego State University)H. Li, M. Wu, S. Yuan, and C. Zhou, "Design of Off-Center Fed Windmill Loop for Pattern Reconfiguration," in IEEE Antennas and Wireless Propagation Letters, vol. 18, no. 8, pp. 1626-1630

[13] Y. Anitha, R. Ranjini, S. Gomathi, "Easy App forExpan Manager Using Android", International Journals of Computer Techniques, Volume: 3 Issue: 2, ISSN: 2394 Manager Using Android", International Journals of Computer Techniques, Volume: 3 Issue: 2, ISSN: 2394-2231 (March- April 2021).

[14] N. ZahiraJahan MCA., M. Phil, K. I. Vinodhini, "Personalized Expense Managing Assistant Using Android", International Journals of Computer Techniques (IJCT), Volume: 3 Issue: 2, ISSN: 2394-

2231 (March-April 2021).

[15] Adams R V Impact of management behaviours in undergraduate engineering students performance(2020)IEEE

[16] Mfaumne H.Bilinga from paper and pencil to mobile .phone phota taking among tanzan university journal of education literacyfinancial socialization (2022)IEEE

[17] Hrithik Gupta, Anant Prakash Singh, Navneet Kumar and Ms.J.Angelin Blessy,"Expense Tracker:A Smart Approach to Track Everyday Expense",Dec 25 2020,IEEE

[18] Angad Manchanda , "Expense Tracker Mobile Application", 2022,IEEE

[19] Girish Bekaroo and Sameer Sunhaloo , "Intelligent Online Budget Tracker", 16 June 2021, IEEE

[20] Dr.V.Geetha, G.Nikhitha, H.Sri Lasya and Dr.C.K.Gomathy,"ExpenditureManagement System",16 May 2022, IEEE