

# **PROJECT REPORT**

## **PERSONAL EXPENSE TRACKER APPLICATION**

**PNT2022TMID43646:**

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### **1. INTRODUCTION**

#### **a. Project Overview**

The Daily Expense Tracker System separates inputs into daily expense allocable amounts. If you go over that day's allocable amount, it deducts it from your income and gives you a new daily expense allocable amount; if that day's allocable amount is less, it adds it to your savings. At the end of the month, a report generating system for daily expenses will produce the income-expenditure curve. You can use it to add any savings you have set aside for special occasions like birthdays and anniversaries.

#### **b. Purpose**

The "Expense Tracker" programme was created to help manage daily spending in a more effective and practical manner. Using this programme, we can lessen the manual tracking of expenditures and daily expense calculations.

### **2. LITERATURE SURVEY**

#### **Existing problem**

Using a manual accounting system may have a number of drawbacks. Any business' accounting process can be challenging. A computerised accounting system may not require you to comprehend the accounting process in the same way that a manual accounting system does. Depending on who is conducting the bookkeeping, this could be a benefit or a drawback. To ensure

that accounting is done correctly, a skilled professional is frequently required. By hand, it could take a while to sort through your financial records' intricacy. Report generation takes

b. References  
[1]. Palestinian Ministry of Education and Higher Education. Palestinian Higher Education Statistics.

[2]. Accreditation and Quality Assurance Committee (AQAC) in Palestine. General Report of Information Technology and Engineering Higher Education in Palestine. Accreditation and Quality Assurance Commission (AQAC). Ramallah, Palestine: Palestinian Ministry of Education and Higher Education; 2007 Apr.

[3]. Engineering Association of Palestine. Current Engineering Statistics Book. Ramallah; 2005.

[4]. Prados J, Peterson G, Laucá L. Quality Assurance of Engineering Education Through Accreditation: The Impact of Engineering Criteria 2000 and Its Global Influence. Journal of Engineering Education. 2005 Jan; 94(1):165–

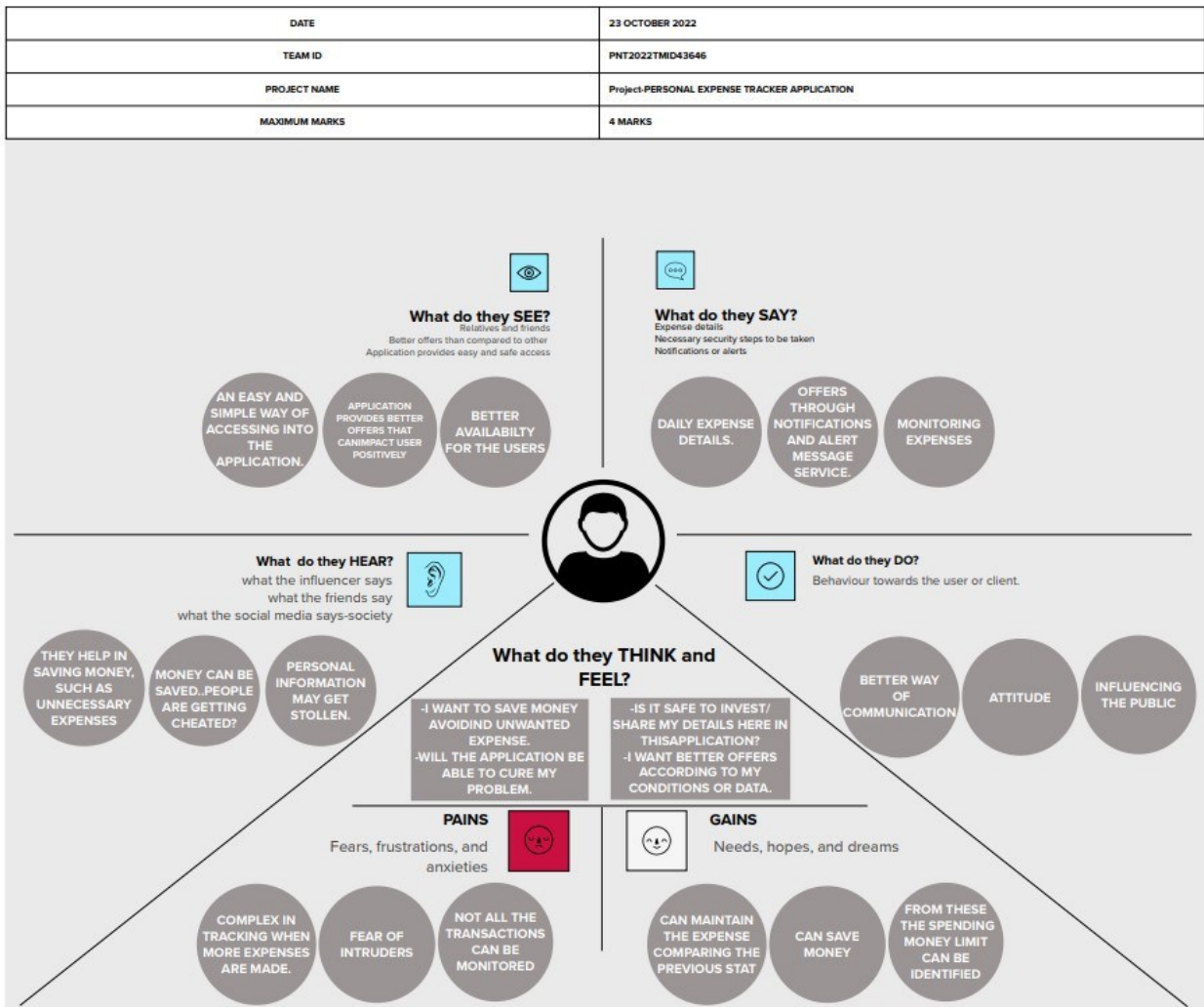
## PERSONAL EXPENSE TRACKER APPLICATION

### Literature Survey

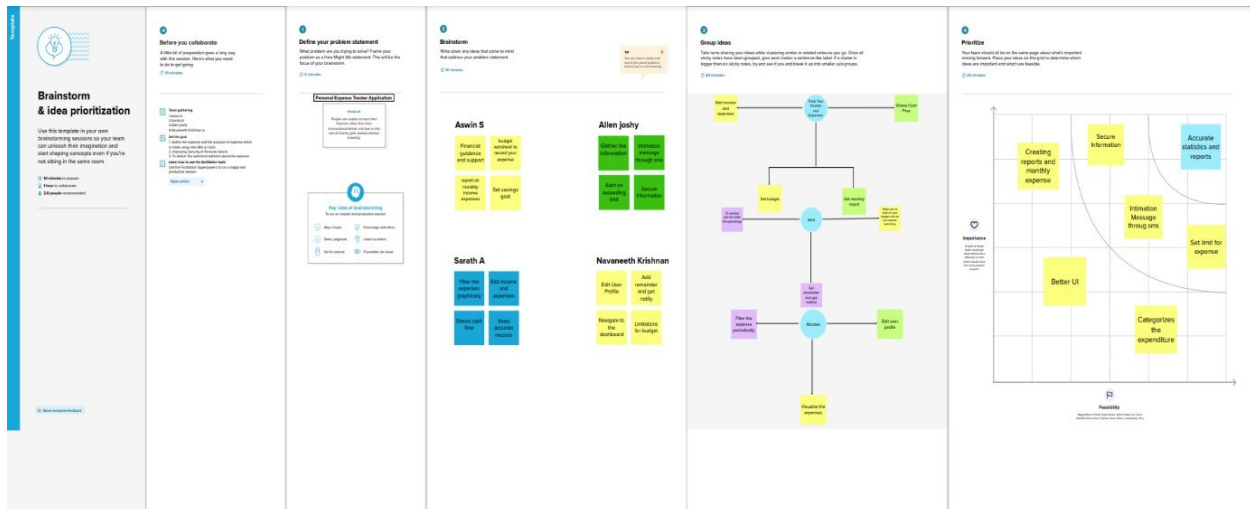
S.NO	PAPER	AUTHOR	YEAR	METHOD AND ALGORITHM	ACCURACY
1	Spending Tracker: A Smart Approach to Track Daily Expense	Uday Pratap Singh, et al	2021	The waterfall model is used. This application will help its users to manage the cost of their daily expenditure. It will guide them and aware them of their daily expenses.	91.00%
2	Expense Manager Application	A Velmurugan, et al	2020	This paper's main aim to eliminate the use of sticky notes, spreadsheets and handling of large chunks of data is successful, the new experience is hassle-free and very handy. It uses the Core Data Model.	94.02%
3	Expense Tracker : A Smart Approach to Track Everyday Expense	Hrithik Gupta, et al	2020	This application will help its users to manage the cost of their daily expenditure. It will guide them and aware them about their daily expenses. Waterfall model is used for the project because all the requirements are clear as this project is not dealing with the clients and hence beforehand planning can be made about how to carry out each phase of development.	89.92%
4	Cloud based Expense Tracker	Asthha Wahal, et al	2018	The waterfall model is used. This application will help its users to overcome the wastage of money. It will guide them and aware them about their daily expenses	93.4%
5	Expense tracker mobile application.	Angad Manchanda	2012	Modern life offers a plethora of options of service and goods for the customers. As a result people's expenses have gone up dramatically. comparing to a decade ago and cost of living has been increasing day by day. thus it is essential to keep a check on the expenses in order to live a good life with a proper budget set up.	TECHNOLOGY: HTML, CSS & JAVASCRIPT CODE

### 3. IDEATION & PROPOSED SOLUTION

#### a. Empathy Map Canvas



#### b. Brainstorm and Ideation



### c. Define Problem Statement

## Ideation Phase

### Define the Problem Statements

Date	25 october 2022
Team ID	PNT2022TMID43646
Project Name	Personal Expense Tracker Application
Maximum Marks	2 Marks

**Customer Problem Statement:**

**I am** a person with zero knowledge in finance

**I'm trying to** track and categorize my personal expense with less effort

**But** I'm not good at finance and end up in fail

**Because** I couldn't always remember how I spent

**Which makes me feel** insecure in my savings for future

**I am** a traveler who travels around the world

**I'm trying to** manage how I spend my money on travelling

**But** Every country has its own money and its values different from my country money which vary

**Because** It's difficult to calculate my expenses in my country money (Rs)

**Which makes me feel** frustrated

d. Proposed solution

**PROJECT: PERSONAL EXPENSE TRACKER APPLICATION**

**PROJECT DESIGN PHASE-1**

**Team ID: PNT2022TMID43646**

Define CS, fit into CC	<b>1.CUSTOMER SEGMENT</b> <ul style="list-style-type: none"> <li>Customers those who spend money unwontedly and to track their expenses.</li> <li>Customer those who can't remember their expense.</li> <li>Those who expecting to track their expense via statistics.</li> </ul>	<b>6.CUSTOMER CONSTRAINTS</b> <ul style="list-style-type: none"> <li>Customer should use UPI or Net-Banking to track the expense.</li> <li>If the money is spend through cash customer must add the expense in the application.</li> </ul>	<b>5.AVAILABLE SOLUTIONS</b> <ul style="list-style-type: none"> <li><b>SPENDEE</b> Application available both android and the ios.</li> </ul>	Explore AS, differentiate
Focus on J&P, tap into BE, understand RC	<b>2. JOBS-TO-BE-DONE/PROBLEMS</b> <ul style="list-style-type: none"> <li>The main Intention of the application is to track the expense and provide statistics of expenses</li> <li>It provides statistics based on categories of expenses.</li> <li>To include money spend through cash,bank cheque's etc.</li> </ul>	<b>9.PROBLEM ROUTE CAUSE</b> <ul style="list-style-type: none"> <li>The Main problem is gathering the data from the UPI apps or Nat-Banking application.</li> <li>This will act as the main problem of the application.</li> <li>Laziness of the customer to add the expense done through cash in the application.</li> </ul>	<b>7.BEHAVIOUR</b> <ul style="list-style-type: none"> <li>Customer should responsibly add the expenses done through off-line mode.</li> <li>To assure the data safety to the user.</li> </ul>	Focus on J&P, tap into BE, understand RC
Identify strong TR & EM	<b>3.TRIGGERS</b> <ul style="list-style-type: none"> <li>Customer may think , they spend more money and no saving.</li> </ul> <b>4.EMOTIONS; BEFORE / AFTER</b> <ul style="list-style-type: none"> <li><b>BEFORE:</b> No Savings.</li> <li><b>AFTER:</b> Few saving due to expense tracking application</li> </ul>	<b>10.YOUR SOLUTION</b> <ul style="list-style-type: none"> <li>Design a cloud based web Application of the expense tracker.</li> <li>Provide statistic of the expense done by the user through the graphs or charts.</li> <li>Providing email alerts if the total expense exceed the limit.</li> </ul>	<b>8.CHANNELS OF BEHAVIOUR</b> <ul style="list-style-type: none"> <li>In Online mode user don't have more work user need to set the maximum expense limit.</li> <li>In Off-line mode user should responsibly add the expenses done through cash</li> </ul>	Identify strong TR & EM



## 4. REQUIREMENT ANALYSIS

### a. Functional requirement and Non functional requirements

#### Project Design Phase-II Solution Requirements (Functional & Non-functional)

Date	31 October 2022
Team ID	PNT2022TMID43646
Project Name	Project - Personal Expense Tracker Application
Maximum Marks	4 Marks

##### Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIn
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User Data	Data gathered in the application server is saved in the high security cloud server.
FR-4	Alert Notification	Alert messages through the Email or SMS.
FR-5	User Monthly Budget Plan	Setting Monthly budget to manage their expenses.
FR-6	Cloud Data Storage	To save the user valuable data high security cloud storage are used (AWS, IBM, GOOGLE, etc)

##### Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Effectiveness, efficiency, and overall experience of the user interacting with our application should be maximised.
NFR-2	Security	Authentication, authorization, encryption of the data must be done in the application.
NFR-3	Reliability	Probability of error in the operations in a specified environment for a specified time should be minimised.
NFR-4	Performance	How the application is functioning accurately and effectively the application is to the end-users.
NFR-5	Availability	Using Cloud Storage and database, application reliability and the user satisfaction will affect the solution

### b. Customer Journey Map

**Customer experience journey map**

Use this framework to better understand customer needs, motivations, and obstacles by illustrating a key scenario or process from start to finish. When possible, use this map to document and summarize interviews and observations with real people rather than relying on your hunches or assumptions.

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**Document an existing experience**

**PROJECT TITLE: PERSONAL EXPENSE TRACKER APPLICATION**

**Project Design Phase II: Customer Journey Map**

**Team ID: PRD21272042446**

	<p><b>Acquaint</b></p> <p>How does someone initially become aware of the process?</p>	<p><b>Enter</b></p> <p>When do people "enter" or come on the stage in the process?</p>	<p><b>Involve</b></p> <p>In the early moments in the process, what happens?</p>	<p><b>Exit</b></p> <p>What do people "exit" or leave the process to do?</p>	<p><b>Add to</b></p> <p>What happens after the experience is over?</p>
<p><b>Stages</b></p> <p>What does the process (or goal) actually experience?</p>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>
<p><b>Communication</b></p> <p>What channels do they have at their disposal to use?</p> <ul style="list-style-type: none"> <li>People: Who are they? How do they use it?</li> <li>Phone: Where are they?</li> <li>Things: What digital touchpoints or physical objects would they use?</li> </ul>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	
<p><b>Goals &amp; motivations</b></p> <p>What does each step in the process achieve? What are the goals? What are the motivations?</p>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	
<p><b>Positive highlight</b></p> <p>What does each step in the process achieve? What are the goals? What are the motivations?</p>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	
<p><b>Negative highlight</b></p> <p>What does each step in the process achieve? What are the goals? What are the motivations?</p>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	
<p><b>Areas of possibility</b></p> <p>What does each step in the process achieve? What are the goals? What are the motivations?</p>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	<div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> <div> <p>Initial contact</p> <p>Initial contact</p> <p>Initial contact</p> </div> </div>	

**Need state**

What does each step in the process achieve? What are the goals? What are the motivations?

**Initial state**

What does each step in the process achieve? What are the goals? What are the motivations?

**First state**

What does each step in the process achieve? What are the goals? What are the motivations?

**Second state**

What does each step in the process achieve? What are the goals? What are the motivations?

**Third state**

What does each step in the process achieve? What are the goals? What are the motivations?

**Fourth state**

What does each step in the process achieve? What are the goals? What are the motivations?

**Fifth state**

What does each step in the process achieve? What are the goals? What are the motivations?

# 5. PROJECT DESIGN

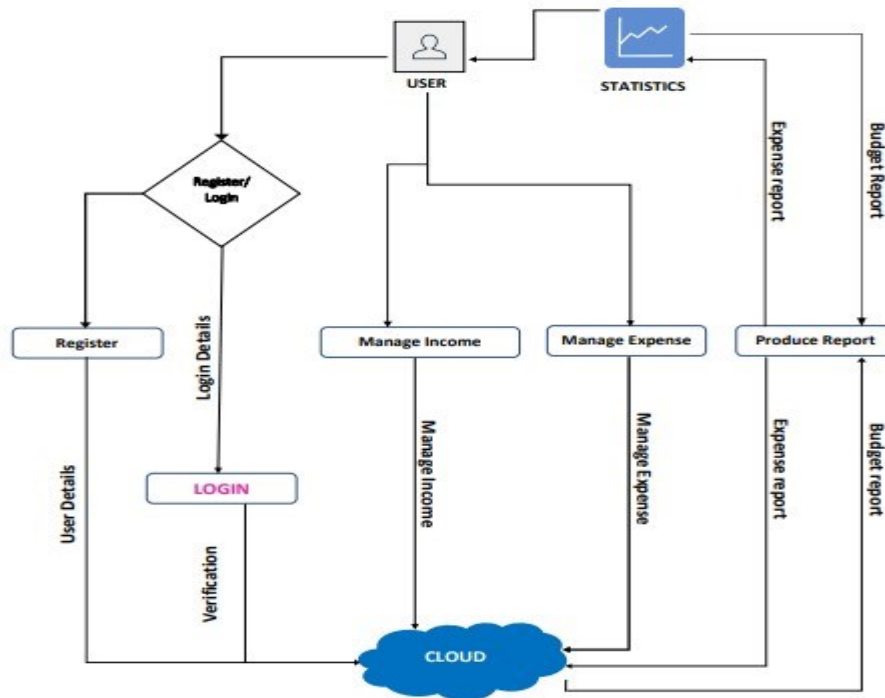
## a. Data Flow Diagram

Project Design Phase-II  
Personal Expense Tracker Application  
Data Flow Diagram & User Stories

Date	10 November 2022
Team ID	PNT2022TMD43646
Project Name	Project: Personal Expense Tracker Application
Maximum Marks	4 marks

**Data Flow Diagrams:**

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.



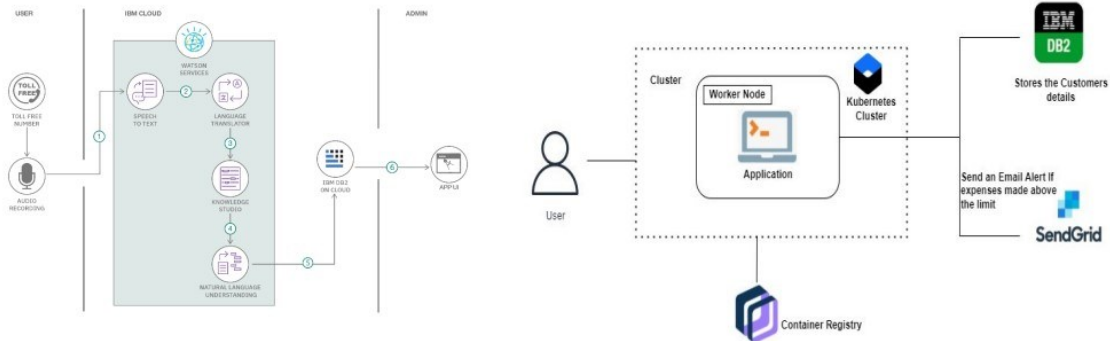
## 6. SOLUTION AND TECHNICAL ARCHITECTURE.



## Project Design Phase-II Technology Stack (Architecture & Stack)

Date	31 October 2022
Team ID	PNT2022TMID43646
Project Name	Project - Personal Expense Tracker Application
Maximum Marks	4 Marks

### Technical Architecture:



## 7. USER STORIES

### User Stories

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Mobile user	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account /dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-2	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through Gmail		Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password		High	Sprint-1
Web user	Dashboard		As a user, I can access my detail, manage the expense, add budget, expense report from the app etc..		High	Sprint-1
	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account /dashboard	High	Sprint-1
	Login	USN-2	As a user, I can log into the application by entering email & password		High	Sprint-1
Customer Care Executive	Dashboard	USN-3	As a user, I can access my detail, manage the expense, add budget, expense report from the app etc..		High	Sprint-1
	Email or Customer Care no		As a user, I can contact the service administration for the support.	I can solve the issue.	High	Sprint-3
Administrator	Email or Customer Care no		As a user, I can contact the service administration for the support.	I can solve the issue.	High	Sprint-1

## 9. PROJECT PLANNING PHASE.

## a. Milestone and Tasks

**Project Planning Phase**  
**Project-Personal Expense Tracker Application**  
**Milestone and Activity List**

Date	26 October 2022
Team ID	PNT2022TMID43646
Project Name	Personal Expense tracker Application

TITLE	DESCRIPTION	DATE
Literature Survey & Information Gathering	Literature survey on the selected project & gathering information by referring the, technical papers, research publications etc.	23 OCTOBER 2022
Prepare Empathy Map	Prepare Empathy Map Canvas to capture the user Pains & Gains, Prepare list of problem statements	24 OCTOBER 2022
Ideation	List the by organizing the brainstorming session and prioritize the top 3 ideas based on the feasibility & importance.	25 OCTOBER 2022
Proposed Solution	Prepare the proposed solution document, which includes the novelty, feasibility of idea, business model, social impact, scalability of solution, etc.	31 OCTOBER 2022

Problem Statement	Prepare problem - statement document.	31 OCTOBER 2022
Solution Architecture	Prepare solution architecture document.	25 OCTOBER 2022

Customer Journey	Prepare the customer journey maps to understand the user interactions & experiences with the application (entry to exit).	10 NOVEMBER 2022
Solution Requirement	Prepare the solution requirement document.	31 OCTOBER 2022
Technology Stack Architecture	Prepare the technology stack architecture diagram.	31 OCTOBER 2022
Data Flow Diagrams	Draw the data flow diagrams and submit for review.	10 NOVEMBER 2022
Prepare Milestone & Activity List	Prepare the milestones & activity list of the project.	10 NOVEMBER 2022
Project Development - Delivery of Sprint-1, 2, 3 & 4	Develop & submit the developed code by testing it.	12 NOVEMBER 2022

## 9. CODING & SOLUTIONING

### a. Feature 1

We have added the data visualization methods for expenditure. The pie chart has been used to represent the monthly expenses. The pie chart is a pictorial representation of data that makes it possible to visualize the relationships between the parts and the whole of a variable. For example, it is possible to understand the industry count or percentage of a variable level from the division by areas or sectors. The recommended use for pie charts is two-dimensional, as three-dimensional use can be confusing.

**code**

```

1  import re
2  import ibm_db
3  from flask import Flask, render_template, request, session
4
5  global table
6  global userid
7
8
9  def insertTableData(conn, username, email, password, age, profession, table):
10     table = 'no'
11     sql = "INSERT INTO usersdetails(username,email,password,age,profession,table) VALUES ('{}','{}','{}','{}','{}','{}').format(
12         username, email,
13         password, age, profession, table)
14     out = ibm_db.exec_immediate(conn, sql)
15     print('Number of affected rows : ', ibm_db.num_rows(out), "\n")
16
17
18  def conditionCheck():
19     username = session.get('username', None)
20     sql = "SELECT table FROM usersdetails WHERE username=?"
21     stmt = ibm_db.prepare(conn, sql)
22     ibm_db.bind_param(stmt, 1, username)
23     ibm_db.execute(stmt)
24     out = ibm_db.fetch_assoc(stmt)
25     print("out check condition ->", out)
26     value = out['TABLE']
27     session['tablequery'] = value
28
29

```

```

86  @app.route("/")
87  @app.route("/login", methods=['POST', 'GET'])
88  def login():
89     msg = ''
90
91     if request.method == 'POST':
92         username = request.form['username']
93         password = request.form['password']
94         sql = "SELECT * FROM usersdetails WHERE username=? AND password=?"
95         stmt = ibm_db.prepare(conn, sql)
96         ibm_db.bind_param(stmt, 1, username)
97         ibm_db.bind_param(stmt, 2, password)
98         ibm_db.execute(stmt)
99         account = ibm_db.fetch_assoc(stmt)
100        print(account)
101
102        table = account['TABLE']
103        userid = account['USERNAME']
104
105        session['username'] = userid
106
107        sql1 = "SELECT username, email, age, profession FROM usersdetails WHERE username=?"
108        stmt_db = ibm_db.prepare(conn, sql1)
109        ibm_db.bind_param(stmt_db, 1, userid)
110        ibm_db.execute(stmt_db)
111        accounts = ibm_db.fetch_assoc(stmt_db)
112
113        if account:
114            session['id'] = account['USERNAME']

```

```

58         stmt = ibm_db.prepare(conn, sql1)
59         ibm_db.bind_param(stmt, 1, email)
60         ibm_db.bind_param(stmt, 2, profession)
61         ibm_db.bind_param(stmt, 3, username)
62         ibm_db.execute(stmt)
63
64
65     def displayDetails(userid):
66         sql1 = "SELECT username, email, age, profession FROM usersdetails WHERE username=?"
67         stmt_db = ibm_db.prepare(conn, sql1)
68         ibm_db.bind_param(stmt_db, 1, userid)
69         ibm_db.execute(stmt_db)
70         accounts = ibm_db.fetch_assoc(stmt_db)
71         return accounts
72
73
74     try:
75         conn = ibm_db.connect(
76             "DATABASE=bludb;HOSTNAME=98538591-7217-4024-b027-8bae776ffad1.c3n41cmd0nqnrk39u98g.databases.appdomain.cloud;PORT=30875;SECURITY=SSL;SSLServerCertificate=DiglCertGlobe",
77             "", "")
78         print("Db connected")
79     except:
80         print("Error")
81
82 app = Flask(__name__)
83 app.secret_key = 'aa'
84
85
29
30     def createNewTableForUser(userid):
31         sqlc = "CREATE TABLE userId=? (date DATE , expensename VARCHAR(22),expenseamount INTEGER,paymode VARCHAR(24),category VARCHAR(22))"
32         stmt = ibm_db.prepare(conn, sqlc)
33         ibm_db.bind_param(stmt,0, userid)
34         createtable = ibm_db.execute(stmt)
35         session['createtable']=createtable
36
37
38     def updateTabletable(table):
39         username = session.get('username', None)
40         sql1 = "UPDATE usersdetails SET TABLE=? WHERE USERNAME=?"
41         stmt = ibm_db.prepare(conn, sql1)
42         ibm_db.bind_param(stmt, 1, table)
43         ibm_db.bind_param(stmt, 2, username)
44         ibm_db.execute(stmt)
45
46
47     def updateTableData(username, password, email, profession):
48         sql = "SELECT * FROM usersdetails WHERE username =? AND password=?"
49         stmt = ibm_db.prepare(conn, sql)
50         ibm_db.bind_param(stmt, 1, username)
51         ibm_db.bind_param(stmt, 2, password)
52         ibm_db.execute(stmt)
53         account = ibm_db.fetch_assoc(stmt)
54         print(account)
55         if account:
56             username = account['USERNAME']
57             sql1 = "UPDATE usersdetails SET EMAIL=?,PROFESSION=? WHERE USERNAME=?"
58             stmt = ibm_db.prepare(conn, sql1)

```

```

145         return render_template('login.html')
146     return render_template('registration.html',msg=msg)
147
148
149 @app.route("/add", methods=['POST', 'GET'])
150 def add():
151
152     if request.method == 'POST':
153         username = request.form['username']
154         password = request.form['password']
155         date = request.form['date']
156         expensename = request.form['expensename']
157         expenseamount = request.form['expenseamount']
158         paymode = request.form['paymode']
159         category = request.form['category']
160
161         sql = "SELECT * FROM usersdetails WHERE username =? AND password=?"
162         stmt = ibm_db.prepare(conn, sql)
163         ibm_db.bind_param(stmt, 1, username)
164         ibm_db.bind_param(stmt, 2, password)
165         ibm_db.execute(stmt)
166         account = ibm_db.fetch_assoc(stmt)
167         print(account)
168         if account:
169             userids = account['USERNAME']
170             sqli = "INSERT INTO expenses(username,date,expensename,expenseamount,paymode,category) VALUES ('{}','{}','{}','{}','{}','{}')".format(
171                 username,
172                 date, expensename, expenseamount, paymode, category)
173             out = ibm_db.exec_immediate(conn, sqli)
174
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```

204     if request.method == 'GET':
205         user = session.get('username', None)
206         print(user)
207         expensedetails = []
208         sql = "SELECT CHAR(DATE(date),USA) as date, expensename, expenseamount, paymode, category FROM expenses WHERE username=?"
209         stmt = ibm_db.prepare(conn, sql)
210         ibm_db.bind_param(stmt, 1, user)
211         ibm_db.execute(stmt)
212         details = ibm_db.fetch_assoc(stmt)
213         while details != False:
214             expensedetails.append(details)
215             details = ibm_db.fetch_assoc(stmt)
216
217         print(expensedetails)
218
219         sql2 = "SELECT SUM(expenseamount) AS TOTALVAL FROM expenses WHERE username = ?"
220         stmt2 = ibm_db.prepare(conn, sql2)
221         ibm_db.bind_param(stmt2, 1, user)
222         ibm_db.execute(stmt2)
223         totalexpense = ibm_db.fetch_assoc(stmt2)
224         print(totalexpense)
225         return render_template('dispxense.html', expensedetails=expensedetails, totalexpense=totalexpense['TOTALVAL'])
226
227
228 @app.route('/logout')
229 def logout():
230     session.pop('loggedin', None)
231     session.pop('id', None)
232     session.pop('username', None)
233     return render_template('login.html')

```

```

174         accounts = displayDetails(userid)
175         return render_template('dashboard.html', accounts=accounts)
176     return render_template('add.html')
177
178     if request.method == 'GET':
179         return render_template('dashboard.html', accounts=accounts)
180
181
182 @app.route("/changedetails", methods=['POST', 'GET'])
183 def changedetails():
184     if request.method == "POST":
185         username = request.form['username']
186         password = request.form['password']
187         email = request.form['email']
188         profession = request.form['profession']
189         updateTableData(username, password, email, profession)
190         return render_template('login.html')
191
192     return render_template('changedetails.html')
193
194
195 @app.route("/dashboard", methods=['POST', 'GET'])
196 def dashboard():
197     username = session.get('username', None)
198     accounts = displayDetails(username)
199     return render_template('dashboard.html', accounts=accounts)
200
201
202 @app.route("/dispxense", methods=['POST', 'GET'])
203 def dispxense():

```

```

223     totalexpense = ibm_db.fetch_assoc(stmt2)
224     print(totalexpense)
225     return render_template('dispxense.html', expensedetails=expensedetails, totalexpense=totalexpense['TOTALVAL'])
226
227
228 @app.route('/logout')
229 def logout():
230     session.pop('loggedin', None)
231     session.pop('id', None)
232     session.pop('username', None)
233     return render_template('login.html')
234
235
236 if __name__ == '__main__':
237     app.run(host='0.0.0.0', debug=True)

```

## b. Feature 2

Email notifications will be sent to the users once they cross the expenditure limit through send grid mail system. Most notifications are transactional, meaning a recipient's action or account activity triggers them. But some notifications are marketing related, encouraging the recipient to take a specific action. Ecommerce product notifications inform recipients about new products or discounts. Plus, unlike general marketing emails, these are highly personalized and focus on a single product. For example, if a customer views an item on your website and that item goes on sale, you can send the customer a notification to let them know this is the best time to buy. Users can also opt into receiving notifications when an outofstock item is back in stock. Notification emails tend to perform well because the content is highly relevant to the recipient. But the only way for the recipient to know this is if you state the content clearly in the subject line.

## 10. TESTING a.

### Test Cases

				Date	19 November 2022								
				Team ID	PNT2022TMD26257								
				Project Name	Personal Expense Tracker Application								
Test case ID	Feature Type	Component	Test Scenario	Pre-Requirement	Steps To Execute	Test Data	Expected Result	Actual Result	Status	Comment	TC for Atom	BUG ID	Executed By
LoginPage_TC_001	Functional	Login Page	Verify user is able to see the Login/signup popup when user clicked on My account button	None	1. Go to website 2.Login page appears	Username: Prithvi password: qwerty	Login/signup popup should display	Working as expected	Pass	-			Prithvi Krishna
LoginPage_TC_002	UI	Login Page	Verify the UI elements in Login/signup	None	1. Go to website 2. Enter details and click login	Username: Prithvi password: qwerty	Application should show below UI elements: a. username text box b. password text box c. Login button d. New customer? register	Working as expected	Pass	-			Vikram
LoginPage_TC_003	Functional	Login page	Verify user is able to log into application with Valid credentials	Username & password	1. Go to website 2. Enter details and click login	Username: Prithvi password: qwerty	User should navigate to user account/homepage	Working as expected	Pass	-			Yashwanth
LoginPage_TC_004	Functional	Login page	Verify user is able to log into application with Invalid credentials.	Username & password	1. Go to website 2. Enter details and click login	Username: Prithvi password: 123456	Application should show 'Incorrect username or password' validation message.	Working as expected	Pass	-			Chandra Mouli
LoginPage_TC_004	Functional	Login page	Verify user is able to log into application with Invalid credentials.	Login first	1. Go to website 2. Enter details and click login	Username: Prithvi password: qwerty	Application should show 'Incorrect username or password' validation message.	Working as expected	Pass	-			Prithvi & Yashwanth
LoginPage_TC_005	Functional	Login page	Verify user is able to log into application with Invalid credentials.	Login first	1. Go to website 2. Enter details and click login	Username: Prithvi password: qwerty	Application should show 'Incorrect username or password' validation message.	Working as expected	Pass	-			Chandra Mouli
Add Expense Page	Functional	Add Expense page	Verify whether user is able to add expense or not	Have some expense to add	1. Add date, expense name and other details. 2. Check if the expense gets added	add expense = 550	Application adds expenses	Working as expected	Pass	-			Vikram

## b. User Acceptance Testing

## Acceptance Testing

### UAT Execution & Report Submission

Date	20 november 2022
Team ID	PNT2022TMID43646
Project Name	Project – Personal Expense Tracker Application

#### 1. Purpose of Document

The purpose of this document is to briefly explain the test coverage and open issues of the Personal Expense Tracker Application project at the time of the release to User AcceptanceTesting (UAT).

#### 2. Defect Analysis

This report shows the number of resolved or closed bugs at each severity level, and how they were resolved

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	6	0	2	4	12
Duplicate	1	0	0	0	1
External	2	0	0	1	3
Fixed	11	2	2	10	25
Not Reproduced	0	0	0	0	0
Skipped	0	0	0	0	0
Won't Fix	0	5	2	1	8
Totals	20	7	6	16	49

### 3. Test Case Analysis

This report shows the number of test cases that have passed, failed, and untested

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	7	0	0	7
Client Application	15	0	0	15
Security	2	0	0	2

Outsource Shipping	0	0	0	6
Exception Reporting	3	0	0	3
Final Report Output	5	0	0	5
Version Control	1	0	0	1

## 11. RESULTS

### a. Performance Metrics

Tracking income and expenses: Monitoring the income and tracking all expenditures (through bank accounts, mobile wallets, and credit & debit cards).

## 12. ADVANTAGES & DISADVANTAGES

### \*Advantages

It is easy to set up and use. It keeps track of everything for you in real time using an automatic app. It has a wealth of information, so any data you believe is crucial to track is there and at your disposal; you only need to look to see it.

Everything has a simple user interface as well. There is a tab or an option available for you whether you want to create a budget, keep track of a specific sort of spending, or review your financial history. It happens instantly. Your data will be tracked for you by the application. In contrast to what you might manually perform, it doesn't do it once a week or once a month.

#### **\*Disadvantage**

Your data is likely being exploited and sold, and it is less secure. If the product is a free service, then you are the product. Like other financial apps, Mint.com offers its services for nothing. No matter what their privacy policy may or may not say, just expect that someone, somewhere is going to record and analyse your spending patterns because they need to pay their expenses. Now, you shouldn't have to worry about identity theft or credit card fraud since these firms are big enough and safe enough to prevent those things from happening.

### **13. CONCLUSION**

You can save money by keeping track of your daily costs, but it can also help you set future financial goals. If possible, look for areas where you may cut costs and negotiate better terms if you know exactly where your money is going. The Expense Tracker project will help us keep track of our everyday spending and make a record of it. Compared to other income and expense trackers, the project we designed is more effective. The project successfully avoids manual calculation by automating to avoid determining the salary and expense each month. It's an intuitive application.

### **14. FUTURE SCOPE**

1. It will have a variety of record-keeping choices (such as food, travel expenses, salary, etc.).
2. It will continue to give updates about our daily spending automatically.
3. Despite being in a haste to make money in today's hectic and expensive world, we eventually gave up. As we naively waste money on unnecessary items and things. We so came over with the intention of following our profit.
- 4) The user can specify their own expense categories here, such as those for food, clothing, rent, and bills, where they must input the money that has been spent and may also add additional information to denote the expense.

## **15.APPENDIX**

**<https://drive.google.com/file/d/1wPfPBbJmMHsfwLPZvpknDgAOnebLy5-b/view?usp=drivesdk>**