

Appendix A

UNIVERSITI TUNKU ABDUL RAHMAN
LEE KONG CHIAN FACULTY OF ENGINEERING AND SCIENCE
UECS1144 OBJECT-ORIENTED APPLICATION DEVELOPMENT
GROUP ASSIGNMENT
 June 2024 Trimester

NO.	STUDENT NAME	PROGRAMME	Practical Group
1.	Emily Tan Kit Lum (Group Leader)	SE	P2
2.	Lim Shi Yao	SE	P5
3.	Ng Kai Xin	SE	P5
4.	Ng Lee Chuan	SE	P5

Requirement Specification

Our team recently developed a budget tracker system. This system is used to track users' income, expenses, and even their financial decisions. Categorizing and recording the income and expenses, setting the budget, and calculating the balance will be provided by this system for monitoring their financial situation. Since the system will consistently monitor their finances, users' impulsive consumption behaviors and financial stress will be reduced gradually. There are several functions are offered in this system to increase its usefulness.

The functions that are provided in this budget tracker system:

1. The system shall allow users to create an account

Users are encouraged to create an account to record their financial details for the first time. Since it includes the private details of the user, they have to enter their personal details to log in to the system before using it. Others cannot access the data without the personal details.

2. The system shall allow users to record income

User can record their daily income with the day, month, and year. Besides, they can record their income with sources such as salary, pocket money, investment, etc. This record will be used to calculate the balance of that month.

3. The system shall allow users to record expenses

Furthermore, user can record their daily expenses based on the day, month, and year. Besides, they can record their expenses with their type such as food, accessories, fashion, and so on and on. Those records also will be used to calculate the balance of that month.

4. The system shall allow users to set budget

Before inputting their income and expenses, they have to set a budget for their monthly expenses. This budget will be used to calculate whether the user is overspending or in the

budget. This action can limit their monthly consumption and try not to spend over their budget set before.

5. The system shall allow users to edit transactions

Users can change the details of either the income transaction or the expense transaction made before at any time if they find that error record in that transaction. All details of the transaction, like day, month, year, amount, source, and type can be edited without other's permission.

6. The system shall allow users to delete the transaction

The system provides this service for users to strike out those transactions that are incorrect or unwanted at any time. After deleting the transaction, all details related to that transaction will be updated.

7. The system shall allow users to compute the balance

In addition, the system will retrieve the total income transactions and expense transactions at present to calculate the balance at any time by subtracting the total expense from the total income. Hence, users can adjust their spending based on the balance.

8. The system shall allow users to generate a report

The users can know that what consumptions occurred on a particular date of that month by entering the date, month and year. The total income and expenses on that date will be displayed. Besides, at the end of the month, this system will produce a monthly report for users. The report will export all the income and expenses in that month. Furthermore, it shows the total income and total expenses, budget set, and balance of that month. Therefore, users have an overview of their transactions in that month. If the user's expense is more than the budget set before, it will give the user a warning.

Sample Output

1. Create account

```
-----Budget Tracker-----  
Please create an account:  
Account name: emily  
  
Password: 1234  
  
Email account: emily@gmail.com  
  
Please set a monthly expense budget(RM) : 500.0  
  
Your account is signed up Successfully!
```

2. Add income

```
-----Add Income-----
Please enter the income information
Year (eg. 2024): 2024
Month (1-12): 1
Day (1-31): 1
Amount: 1000.0
Source: Salary
Income added succesfully!

Please enter the income information
Year (eg. 2024): 2024
Month (1-12): 1
Day (1-31): 1
Amount: 100.0
Source: Bonus
Income added succesfully!

Please enter the income information
Year (eg. 2024): 2024
Month (1-12): 1
Day (1-31): 15
Amount: 500.0
Source: Bonus
Income added succesfully!

Please enter the income information
Year (eg. 2024): 2024
Month (1-12): 1
Day (1-31): 20
Amount: 200.0
Source: Freelance
Income added succesfully!
```

3. Add Expenses

```
-----Add Expense-----  
Please enter the expense information  
Year (eg. 2024): 2024  
Month (1-12): 1  
Day (1-31): 1  
Amount: 50.0  
Type: Food  
Expense added succefully!  
  
Please enter the expense information  
Year (eg. 2024): 2024  
Month (1-12): 1  
Day (1-31): 1  
Amount: 25.0  
Type: Drink  
Expense added succefully!  
  
Please enter the expense information  
Year (eg. 2024): 2024  
Month (1-12): 1  
Day (1-31): 3  
Amount: 60.0  
Type: Food  
Expense added succefully!  
  
Please enter the expense information  
Year (eg. 2024): 2024  
Month (1-12): 1  
Day (1-31): 5  
Amount: 15.0  
Type: Drink  
Expense added succefully!
```

Please enter the expense information

Year (eg. 2024): 2024

Month (1-12): 1

Day (1-31): 10

Amount: 220.0

Type: Concert ticket

Expense added successfully!

Please enter the expense information

Year (eg. 2024): 2024

Month (1-12): 1

Day (1-31): 20

Amount: 500.0

Type: Trip

Expense added successfully!

4. Edit Income

```
-----Display Daily Transaction-----
Please enter the date of the transaction
Year (eg. 2024): 2024
Month (1-12): 1
Day (1-31): 1

-----1/1/2024 Income Transaction-----
Amount          Source
RM1000.00       Salary
RM100.00        Bonus

-----Edit Income-----
Please enter the original income information that you want to modify
Amount: 1000.0
Source: Salary

Please enter the latest income information:
Year (eg. 2024): 2024
Month (1-12): 1
Day (1-31): 1
Amount: 2000.0
Source: Salary
Income edited successfully!
```


5. Edit Expenses

```
-----Display Daily Transaction-----
Please enter the date of the transaction
Year (eg. 2024): 2024
Month (1-12): 1
Day (1-31): 1

-----1/1/2024 Expense Transaction-----
Amount          Type
RM50.00         Food
RM25.00         Drink

-----Edit Expense-----
Please enter the original expense information that you want to modify
Amount: 50.0
Source: Food

Please enter the latest expense information:
Year (eg. 2024): 2024
Month (1-12): 1
Day (1-31): 1
Amount: 600.0
Type: Trips
Expense edited successfully!
```

6. Delete Income

```

-----Display Daily Transaction-----
Please enter the date of the transaction
Year (eg. 2024): 2024
Month (1-12): 1
Day (1-31): 1

-----1/1/2024 Income Transaction-----
Amount          Source
RM2000.00       Salary
RM100.00        Bonus

-----Delete Income-----
Please enter the original income information that you want to delete
Amount: 100.0
Source: Bonus
Income deleted successfully!

```

7. Delete Expenses

```

-----Display Daily Transaction-----
Please enter the date of the transaction
Year (eg. 2024): 2024
Month (1-12): 1
Day (1-31): 1

-----1/1/2024 Expense Transaction-----
Amount          Type
RM600.00        Trips
RM25.00         Drink

-----Delete Expense-----
Please enter the original expense information that you want to delete
Amount: 25.0
Type: Drink
Expense deleted succefully!

```

8. Daily Transaction Record

-----Display Daily Transaction-----
Please enter the date of the transaction
Year (eg. 2024): 2024
Month (1-12): 1
Day (1-31): 1

Output file:

-----1/1/2024 Transaction-----
Income Transaction:
Amount Source
RM2000.00 Salary

Total Daily Income: RM2000.00

Expense Transaction:
Amount Type
RM600.00 Trips

Total Daily Expenses: RM600.00

9. Monthly Report

```
-----Monthly Report-----  
Please enter the year(eg. 2024): 2024  
Please enter the month(1 - 12):1
```

Output file:

```
-----Monthly Report-----  
Income Transactions:  
Date           Amount           Source  
01/01/2024     RM2000.00        Salary  
15/01/2024     RM500.00         Bonus  
20/01/2024     RM200.00         Freelance  
  
Expense Transactions:  
Date           Amount           Type  
01/01/2024     RM600.00         Trips  
03/01/2024     RM60.00          Food  
05/01/2024     RM15.00          Drink  
10/01/2024     RM220.00         Concert ticket  
20/01/2024     RM500.00         Trip  
  
Total Income: RM2700.00  
Total Expenses: RM1395.00  
Budget of the month: RM500.00  
Balance: RM1305.00  
  
Warning: You are out of budget!!!  
-----
```