

## **Task 3**

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### **Function and Classes**

For this task, I did a simulation for a financial tracker that can be used to track daily transactions such as deposits, withdrawals, and savings goals for both personal account and business account. This program consists of three main classes which is GeneralTracker, PersonalTracker and BusinessTracker.

The first part of the code which is the class GeneralTracker is used for handling basic task such as deposit, withdrawal, and displaying account summary to the user. The first function in the GeneralTracker which is the `__init__` function takes the name of the account holder name, set the initial account balance to RM 0.00, and an empty list named record. The next function, deposit, takes two input which is the amount deposited and the expenses type. If the user enters value less than 0, it will return ValueError and a message informing the user that the deposited value must be at least RM 0.01. Then, the transaction is being saved to record list and inform the user that transaction has been successfully recorded.

Withdraw function also takes two input from the user which are the expenses amount and the type of expenses occurred. However, if the amount wished to be withdraw is greater than the amount in the account balance, ValueError will raise and inform the user that the balance is insufficient. The transaction will go through only if user has enough balance in their bank account to spend. Amount spent will be deducted from the balance and will inform the user of the withdrew details. A function named `check_acc_bal` will shows the amount of balance in the account as well as the transaction detail.

The next class, which is the PersonalTracker class is a class the inheritance all the things from the parent class (GeneralTracker) and can be used for further action specified

for personal account such as set savings goal and check savings goal. The `__init__` function are necessary to inherit value from the parent class and the function will also set the initial savings goal to RM 0.00. Savings goal can be set by calling the `set_savings_goal` function which requires user to input the goal of how much money needs to be saved. Then, it will display a message to users that savings goal has been set. After setting the amount of money that the user wishes to save, users also can check the status of the savings goal by calling the `check_savings_goal`. This function does not requires user to enter any input and it will tell the users that they have met their savings goal if the account balance is more than the savings target. On the other hand, if the account balance has yet to be more than the savings target, it will give the users insight into what is the remaining amount of money that the users need to deposit in order to achieve their target.

The last class which is the `BusinessTracker` class that is specified for business owners that wish to track their financial transaction and put a limit to their expenses so that they will not overspend their money as controlling expenses is very important for a company to remain in business. The first function which is the `__init__` function is almost similar to the `__init__` function in the previous class as it inherits the component from the parent class and the only difference is that it set initial expenses limit to RM 0.00 while the previous class set the initial savings goal to RM 0.00. The next function, `set_expenses_limit` allows user to the the limit for their expenses but still allows them to withdraw the money if needed. This function will also inform users the amount of limit that they have set. The last function in this class is a function that allows businesses to check their expenses limit. This function will calculate the total transaction with remarks expense to the transaction and if the total expense is greater than the limit, it will give warning to the businesses that they have exceeded the limit set previously. On the other hand, if the total expenses are still below the limit, it will just inform that they are still within limit and what is the current total expenses.

The last function will run a simulation of a personal tracker and the business tracker and it will use all the function in the classes to showcase its use. The final step is to call the simulation which will run the tracker with the simulation.

As a conclusion, the financial tracking system demonstrated through this project is a robust example that utilizes function, class, and inheritance in Python. Through inheritance, the system shows flexibility in managing both personal and business finances. The GeneralTracker is a foundation for the system and both PersonalTracker and BusinessTracker extend its functionality to cater to their own unique requirements such as savings goal and expenses limit.