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COLLEGE OF TECHNOLOGY

(AN AUTONOMOUS INSTITUTION)

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Practical Record Note

Name : PUSHBAJA K

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Subject code/name : Laboratory

Programme :

Certified that this is a bonafide record of work done by **PUSHBAJA K** of _____ Semester in **Python Programming - I Year - II Sem - Project Module** Laboratory during the academic year 2023-2024

His/Her University Register Number is **2303811710422124**

Aim:

Project Module.

Program:

CTP28132.py

```
class ExpenseSplitter:
    def __init__(self):
        self.expenses = []
        self.balances = {}

    # Input Module
    def add_expense(self, description, amount, payer, participants):
        if self.validate_expense(description, amount, payer, participants):
            expense = {
                'description': description,
                'amount': amount,
                'payer': payer,
                'participants': participants
            }
            self.expenses.append(expense)
        else:
            print("Invalid expense details. Please check your input.")
# Detection Module
    def validate_expense(self, description, amount, payer, participants):
        if not description:
            return False
        if amount <= 0:
            return False
        if not payer:
            return False
        if not participants or payer not in participants:
            return False
        return True
# Conversion Module
    def calculate_shares(self):
        self.balances.clear()
        for expense in self.expenses:
            amount_per_person = expense['amount'] / len(expense['participants'])
            for participant in expense['participants']:
                if participant != expense['payer']:
                    self.balances[participant] = self.balances.get(participant,
0) - amount_per_person
                    self.balances[expense['payer']] =
self.balances.get(expense['payer'], 0) + amount_per_person
# Output Module
    def display_summary(self):
        for person, balance in self.balances.items():
            if balance > 0:
                print(f"{person} is owed {balance:.2f}")
            else:
                print(f"{person} owes {-balance:.2f}")

# Example Usage
if __name__ == "__main__":
    splitter = ExpenseSplitter()
    splitter.add_expense('Dinner', 100, 'Alice', ['Alice', 'Bob', 'Charlie'])
    splitter.add_expense('Movie', 60, 'Bob', ['Alice', 'Bob', 'Charlie'])
    splitter.calculate_shares()
    splitter.display_summary()
```


Output:

Test case - 1
User Output
Hello World
`Hello World`

Result:

Thus the above program is executed successfully and the output has been verified