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#Input the new expense

from dateutil.parser import parse
import csv
import pandas as pd




#to check if input is in date format
def validate_date(inp_string):
  try:
    parse(inp_string)
  except :
    print("Wrong format try again")
    return 0


#to check if input is in int
def validate_float(inp_string):
  try:
    float(inp_string)
  except :
    print("Wrong format try again")
    return 0


def new_expense():
  new_entry={'Date':0,'Category':0,'Amount':0,'Description':0}
  check=0
  while(check==0):
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    print("Please enter date in YYYY-MM-DD:\t")
    date = input()
    check = validate_date(date)

check=0
while(check==0):
    print("Please enter category of expense:")
    category=input()
    if category=='':
        print('No input!!')
    else:
        check=1

check=0
while(check==0):
    print("Please enter the amount:")
    amount=input()
    check=validate_float(amount)
amount=float(amount)

check=0
while(check==0):
    print("Please enter discription of this expense:")
    disc=input()
    if disc=='':
        print('No input!!')
    else:
        check=1



new_entry['Date']=date
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    new_entry['Category']=category
    new_entry['Amount']=amount
    new_entry['Description']=disc

    return new_entry

def multiple_entry():
    exp_list=[]
    exp_list.append(new_expense())
    ans='y'
    while(ans=='y'):
        print('Do you want to add more expenses (y for more):')
        ans=input()
        if(ans=='y'):
            exp_list.append(new_expense())
        else:
            print('Data recorded')
            ans='n'
    return exp_list

#View Expense

def check_missing_data():
    missrows=[]
    with open('expense.csv', 'r') as csvfile:
        csvreader = csv.reader(csvfile)
        for row in csvreader:
            check=0

            for i in range(4):
                if row[i]=='':
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                missrows.append(check)
                break
        check+=1
    if missrows!=[]:
        print('Data missing in rows: ',missrows)
    return 0

def expense_reader():
    df= pd.read_csv("expense.csv")
    print(df)
    check_missing_data()
    return 0

def check_expense_reader():
    try:
        expense_reader()
    except:
        print("  ")

#Set and track the budget

import pandas as pd

def budget_writer():
    check=0
    while(check==0):
        print("Please enter the new budget:")
        budget=input()
        check=validate_float(budget)
    file=open('Budget.txt','w')
    file.write(budget)
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    file.close()



def track_budget():
    file=open('Budget.txt','r')
    budget=file.read()
    file.close()
    if(budget==''):
        print("No current monthly budget set.")
        budget_writer()
    else:
        print("Currently monthly budget is : ",budget)
        print("Do you want to set a new budget? (y or n)")
        inp=input()
        check=0
        while check==0:
            if inp=='y' or inp=='n':
                break
            print("Wrong input!!")
            print("Currently monthly budget is : ",budget)
            print("Do you want to set a new budget? (y or n)")
            inp=input()
        if inp=='y':
            budget_writer()

    budget=float(budget)

    print("Monthly budget left:")

    df= pd.read_csv("expense.csv")
    df['date'] = pd.to_datetime(df['date'])
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    df.set_index('date',inplace=True)
    budgettable=budget-df['amount'].resample('ME').sum().sort_values()
    print(budgettable)
#Save data

def expense_writer(entry={}):
    with open("expense.csv", "a", newline="") as f:
        w = csv.DictWriter(f, entry.keys())
        w.writerow(entry)

#expense_writer(exp)

def save_expenses(newExpenses=[]):
    try:
        df= pd.read_csv("expense.csv")
    except:
        expense_writer({'date': 'date', 'category': 'category', 'amount': 'amount', 'description':
'description'})
    for inp in newExpenses:
        expense_writer(inp)
    check_expense_reader()
    print('Data saved')



#Main Menu
print("Welcome to Personal Budget Manager!!")
def menu():
    inp=0
    print("\n\nMenu:")
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    print("1. Add Expense")
    print("2. View Expense")
    print("3. Track Budget")
    print("4. Save Expenses")
    print("5. Exit")
    print("\n\n Please enter index of the option you want to select")
    inp=input()
    return inp

inp=menu()
exp_list=[]
loop=0

while loop==0:

    if inp=='1':
        exp_list=multiple_entry()
        inp=menu()
    elif inp=='2':
        check_expense_reader()
        inp=menu()
    elif inp=='3':
        track_budget()
        inp=menu()
    elif inp=='4':
        save_expenses(exp_list)
        inp=menu()
    elif inp=='5':
        print('Thanks for using Personal Budget Manager!!')
        break
    else:
```

```
print("Wrong input!!")
inp=menu()
```