```python
import random
import pandas as pd

class SavingsAccount:
    def __init__(self, account_number, balance, transactions):
        self.account_number = account_number
        self.balance = balance
        self.transactions = transactions

    def increase_balance(self, amount):
        self.balance += amount
        self.transactions.append(('Deposit', amount))

    def decrease_balance(self, amount):
        if amount <= self.balance:
            self.balance -= amount
            self.transactions.append(('Withdrawal', amount))
        else:
            print("Insufficient funds.")

def build_accounts(account_total, seed_value, months_duration,
transaction_frequency):
    accounts_data = []
    random.seed(seed_value)
    for i in range(account_total):
        balance = random.randint(1000, 10000)
        transactions = []
        for month in range(months_duration):
            for transaction in range(transaction_frequency):
                amount = random.randint(100, 500)
                if random.random() < 0.5:
                    transactions.append(('Deposit', amount))
                    balance += amount
                else:
                    transactions.append(('Withdrawal', amount))
                    balance -= amount
        accounts_data.append(SavingsAccount(i+1, balance,
transactions))
    return accounts_data

def show_accounts(accounts_data):
    for account in accounts_data:
        print(f"Account No: {account.account_number}, Balance:
{account.balance}")

def arrange_accounts_by_balance(accounts_data):
    return sorted(accounts_data, key=lambda x: x.balance)

if __name__ == "__main__":
    total_accounts = 100
```

```python
    seed = 42
    duration = 12
    transactions_per_month = 5
    accounts_data = build_accounts(total_accounts, seed, duration,
transactions_per_month)

    show_accounts(accounts_data)

    sorted_accounts_data = arrange_accounts_by_balance(accounts_data)
    print("\nSorted accounts by balance:")
    show_accounts(sorted_accounts_data)
```

```
Account No: 1, Balance: 2488
Account No: 2, Balance: -767
Account No: 3, Balance: 4069
Account No: 4, Balance: 8606
Account No: 5, Balance: 8364
Account No: 6, Balance: 6891
Account No: 7, Balance: 9015
Account No: 8, Balance: 13318
Account No: 9, Balance: 7480
Account No: 10, Balance: 5169
Account No: 11, Balance: 10510
Account No: 12, Balance: 3199
Account No: 13, Balance: 5333
Account No: 14, Balance: 2002
Account No: 15, Balance: 8154
Account No: 16, Balance: 8943
Account No: 17, Balance: 10118
Account No: 18, Balance: 3978
Account No: 19, Balance: 7646
Account No: 20, Balance: 9007
Account No: 21, Balance: 1269
Account No: 22, Balance: 5278
Account No: 23, Balance: 5911
Account No: 24, Balance: 6455
Account No: 25, Balance: 3002
Account No: 26, Balance: 4405
Account No: 27, Balance: 1222
Account No: 28, Balance: 2004
Account No: 29, Balance: 8352
Account No: 30, Balance: 6760
Account No: 31, Balance: 10126
Account No: 32, Balance: 592
Account No: 33, Balance: 5308
Account No: 34, Balance: 8937
Account No: 35, Balance: -393
Account No: 36, Balance: 7082
Account No: 37, Balance: 2201
Account No: 38, Balance: 2672
```

```
Account No: 39, Balance: 2086
Account No: 40, Balance: -390
Account No: 41, Balance: -53
Account No: 42, Balance: 3141
Account No: 43, Balance: 4604
Account No: 44, Balance: 4504
Account No: 45, Balance: 7040
Account No: 46, Balance: 5719
Account No: 47, Balance: 7644
Account No: 48, Balance: 6133
Account No: 49, Balance: 5602
Account No: 50, Balance: 8283
Account No: 51, Balance: 2901
Account No: 52, Balance: 569
Account No: 53, Balance: 11749
Account No: 54, Balance: 4848
Account No: 55, Balance: 4142
Account No: 56, Balance: 5798
Account No: 57, Balance: 10533
Account No: 58, Balance: 9577
Account No: 59, Balance: -598
Account No: 60, Balance: 1006
Account No: 61, Balance: 7506
Account No: 62, Balance: 13117
Account No: 63, Balance: 6735
Account No: 64, Balance: 5296
Account No: 65, Balance: 3490
Account No: 66, Balance: 810
Account No: 67, Balance: 2912
Account No: 68, Balance: 8398
Account No: 69, Balance: 7540
Account No: 70, Balance: 3447
Account No: 71, Balance: 1832
Account No: 72, Balance: 3093
Account No: 73, Balance: 1036
Account No: 74, Balance: 10522
Account No: 75, Balance: 6095
Account No: 76, Balance: 9084
Account No: 77, Balance: 9255
Account No: 78, Balance: 5089
Account No: 79, Balance: 9799
Account No: 80, Balance: 8616
Account No: 81, Balance: 710
Account No: 82, Balance: 1747
Account No: 83, Balance: 5500
Account No: 84, Balance: 4837
Account No: 85, Balance: 7817
Account No: 86, Balance: 3556
Account No: 87, Balance: 6527
```

```
Account No: 88, Balance: -392
Account No: 89, Balance: 1396
Account No: 90, Balance: 4018
Account No: 91, Balance: 1983
Account No: 92, Balance: 11405
Account No: 93, Balance: -584
Account No: 94, Balance: 2901
Account No: 95, Balance: 6717
Account No: 96, Balance: 11417
Account No: 97, Balance: 6959
Account No: 98, Balance: 5975
Account No: 99, Balance: 5759
Account No: 100, Balance: 6148

Sorted accounts by balance:
Account No: 2, Balance: -767
Account No: 59, Balance: -598
Account No: 93, Balance: -584
Account No: 35, Balance: -393
Account No: 88, Balance: -392
Account No: 40, Balance: -390
Account No: 41, Balance: -53
Account No: 52, Balance: 569
Account No: 32, Balance: 592
Account No: 81, Balance: 710
Account No: 66, Balance: 810
Account No: 60, Balance: 1006
Account No: 73, Balance: 1036
Account No: 27, Balance: 1222
Account No: 21, Balance: 1269
Account No: 89, Balance: 1396
Account No: 82, Balance: 1747
Account No: 71, Balance: 1832
Account No: 91, Balance: 1983
Account No: 14, Balance: 2002
Account No: 28, Balance: 2004
Account No: 39, Balance: 2086
Account No: 37, Balance: 2201
Account No: 1, Balance: 2488
Account No: 38, Balance: 2672
Account No: 51, Balance: 2901
Account No: 94, Balance: 2901
Account No: 67, Balance: 2912
Account No: 25, Balance: 3002
Account No: 72, Balance: 3093
Account No: 42, Balance: 3141
Account No: 12, Balance: 3199
Account No: 70, Balance: 3447
Account No: 65, Balance: 3490
```

```
Account No: 86, Balance: 3556
Account No: 18, Balance: 3978
Account No: 90, Balance: 4018
Account No: 3, Balance: 4069
Account No: 55, Balance: 4142
Account No: 26, Balance: 4405
Account No: 44, Balance: 4504
Account No: 43, Balance: 4604
Account No: 84, Balance: 4837
Account No: 54, Balance: 4848
Account No: 78, Balance: 5089
Account No: 10, Balance: 5169
Account No: 22, Balance: 5278
Account No: 64, Balance: 5296
Account No: 33, Balance: 5308
Account No: 13, Balance: 5333
Account No: 83, Balance: 5500
Account No: 49, Balance: 5602
Account No: 46, Balance: 5719
Account No: 99, Balance: 5759
Account No: 56, Balance: 5798
Account No: 23, Balance: 5911
Account No: 98, Balance: 5975
Account No: 75, Balance: 6095
Account No: 48, Balance: 6133
Account No: 100, Balance: 6148
Account No: 24, Balance: 6455
Account No: 87, Balance: 6527
Account No: 95, Balance: 6717
Account No: 63, Balance: 6735
Account No: 30, Balance: 6760
Account No: 6, Balance: 6891
Account No: 97, Balance: 6959
Account No: 45, Balance: 7040
Account No: 36, Balance: 7082
Account No: 9, Balance: 7480
Account No: 61, Balance: 7506
Account No: 69, Balance: 7540
Account No: 47, Balance: 7644
Account No: 19, Balance: 7646
Account No: 85, Balance: 7817
Account No: 15, Balance: 8154
Account No: 50, Balance: 8283
Account No: 29, Balance: 8352
Account No: 5, Balance: 8364
Account No: 68, Balance: 8398
Account No: 4, Balance: 8606
Account No: 80, Balance: 8616
Account No: 34, Balance: 8937
```

```
Account No: 16, Balance: 8943
Account No: 20, Balance: 9007
Account No: 7, Balance: 9015
Account No: 76, Balance: 9084
Account No: 77, Balance: 9255
Account No: 58, Balance: 9577
Account No: 79, Balance: 9799
Account No: 17, Balance: 10118
Account No: 31, Balance: 10126
Account No: 11, Balance: 10510
Account No: 74, Balance: 10522
Account No: 57, Balance: 10533
Account No: 92, Balance: 11405
Account No: 96, Balance: 11417
Account No: 53, Balance: 11749
Account No: 62, Balance: 13117
Account No: 8, Balance: 13318
```

```python
import pandas as pd

def calc_value_reduction(original_value, insurance_years):
    return original_value * (1 - 0.07)**insurance_years


def calc_insurance_costs(original_value, insurance_years,
rate_of_insurance=0.05):

    adjusted_value = calc_value_reduction(original_value,
insurance_years)

    yearly_cost = rate_of_insurance * adjusted_value
    quarterly_cost = yearly_cost / 4
    monthly_cost = yearly_cost / 12

    return adjusted_value, yearly_cost, quarterly_cost, monthly_cost

# Changed vehicle details
vehicle_information = {
    'vehicle_id': '789DEF',
    'make': 'Ford',
    'model': 'Focus',
    'year': 2021,
    'initial_value': 22000,
    'insurance_years': 3
}

adjusted_value, yearly_cost, quarterly_cost, monthly_cost =
calc_insurance_costs(
    vehicle_information['initial_value'],
vehicle_information['insurance_years'])
```

```python
premium_costs = {
    'Period': ['Yearly', 'Quarterly', 'Monthly'],
    'Premium ($)': [yearly_cost, quarterly_cost, monthly_cost]
}

premium_costs_df = pd.DataFrame(premium_costs)
premium_costs_df, adjusted_value

(      Period   Premium ($)
 0     Yearly    884.792700
 1  Quarterly    221.198175
 2    Monthly     73.732725,
 17695.853999999996)

import matplotlib.pyplot as plt

def visualize_premium_distribution(premium_costs_df):
    plt.figure(figsize=(8, 5))
    bars = plt.barh(premium_costs_df['Period'],
premium_costs_df['Premium ($)'], color=['orange', 'blue', 'green'])
    plt.title('Premium Distribution by Period')
    plt.xlabel('Premium ($)')
    plt.ylabel('Payment Period')
    plt.grid(True, axis='x', linestyle='--', alpha=0.6)

    # Add value labels to bars
    for bar in bars:
        xval = bar.get_width()
        plt.text(xval, bar.get_y() + bar.get_height()/2, round(xval,
2), va='center', ha='left')

    plt.show()

# Call the modified function using the second DataFrame
visualize_premium_distribution(premium_costs_df)
```

Premium Distribution by Period