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Design-Template – Wk7 Arrays

**Requirements:**

Create a data collection program that collects all the data for a trip and dispenses per person cost, total cost, and categorical cost (food and gas). Retrieve number of people on the trip, number of days of the trip, and daily expenditures for food and gas.

**Design:**

* **welcomeMessage():**
  + print creator details and program details
* **endMessage(food, gas, totalCost, perPersonCost):**
  + Accepts two arrays (food, gas) and two floats (totalCost, perPersonCost)
  + print out total spent on food, gas, total cost, and per person cost
    - use sum(food) and sum(gas) to get total for them.
* **Main():**
  + welcomeMessage()
  + numPeople = int(input(‘Input num people on trip’))
  + numDays = int(input(‘Input num days of trip’))
  + set count = 1
  + Instantiate empty arrays, food & gas
  + Get cost for food and gas, day by day
  + While count <= numDays:
    - Food.append(float(input(‘Day {} food cost:\t’.format(count))))
    - Gas.append(float(input(‘Day {} gas cost:\t’.format(count))))
  + Calculate totalCost and perPersonCost
    - totalCost = round(sum(food) + sum(gas), 2)
    - perPersonCost = round(totalCost / numPeople, 2)
  + endMessage(food, gas, totalCost, perPersonCost)

**Test Plan:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test #** | **Number of People** | **Number of Days** | **Food and gas**  **Per day input** | **Expected Output** |
| **1** | **5** | **5** | **38.75/day & 27.98/day** | **Food = $193.75**  **Gas = $139.9**  **Total = $333.65**  **perPerson = $66.73** |
| **2** | **3** | **4** | **20/day & 25/day** | **Food = $80.0**  **Gas = $100.0**  **Total = $180.0**  **perPerson = $60.0** |
| **3** | **2** | **3** | **Food(20.34, 54, 67.89)**  **Gas(32.45, 21.86, 54.12)** | **Food = $142.23**  **Gas = $108.43**  **Total = $250.66**  **perPerson = $125.33** |

**Test 1:**

A screenshot of a computer

Description automatically generated with medium confidence

**Test 2:**

A screenshot of a computer

Description automatically generated with medium confidence

**Test 3:**

A screenshot of a computer

Description automatically generated with medium confidence