Sprint 1

**Requirements**

The program should do the following:

* The input must be a single string following English grammar.
* Sentences will contain numbers followed by types of coins with predetermined value and may be plural or not (“penny” or “pennies”)
* The sentence will not contain punctuation at the end.
* The output must be a single number formatted as a dollar amount
* Handle unexpected denominations by displaying an error message

**Design**

BEGIN  
  
 DEFINE a dictionary called coin\_values:  
 "penny" → 0.01  
 "nickel" → 0.05  
 "dime" → 0.10  
 "quarter" → 0.25  
  
 PROMPT the user to input a sentence describing coins  
  
 SPLIT the input string by " and " to get a list of coin phrases  
  
 SET total = 0  
  
 FOR each phrase in the list:  
 SPLIT the phrase into two parts: number and coin word  
 CONVERT the number to an integer  
 CONVERT the coin word to lowercase and singular form  
 IF coin word ends in "s":  
 REMOVE the "s"  
 IF coin word is "pennies":  
 REPLACE with "penny"  
   
 LOOK UP the coin value using coin word in coin\_values  
  
 IF the coin word is valid:  
 ADD (number × coin value) to total  
 ELSE:  
 DISPLAY an error message and CONTINUE  
  
 ROUND total to two decimal places  
  
 PRINT the total as a dollar amount  
  
END

**Testing**

|  |  |  |  |
| --- | --- | --- | --- |
| Test Input | Expected Output | Actual Output | Pass/Fail |
| 1 penny and 2 nickels | 0.11 | 0.10 | Fail |
| 4 dimes and 7 quarters | 2.15 | 2.15 | Pass |
| 1 quarter and 3 pennies | 0.28 | 0.25 | Fail |
| 21 pennies and 17 dimes and 52 quarters | 14.91 | 13.70 | Fail |
| 95 dimes and 73 quarters and 22 nickels and 36 pennies | 29.21 | 27.84 | Fail |
| 1 nickel and 17 quarters | 4.30 | 4.30 | Pass |
| 21 nickels and 15 pennies | 1.20 | 1.05 | Fail |
| 1 dime and 1 nickel and 1 penny and 1 quarter | 0.41 | 0.40 | Fail |

Summary: All tests that include pennies are failing. The program is attempting to singularize the types of coins based on whether they have the letter S included. Since 'pennies' is not found in the coin\_values dictionary, those coins are skipped in the total calculation, resulting in lower dollar amounts whenever pennies are included.