

Solution Manual for Starting Out with Python 3rd Edition Gaddis
0133582736 9780133582734

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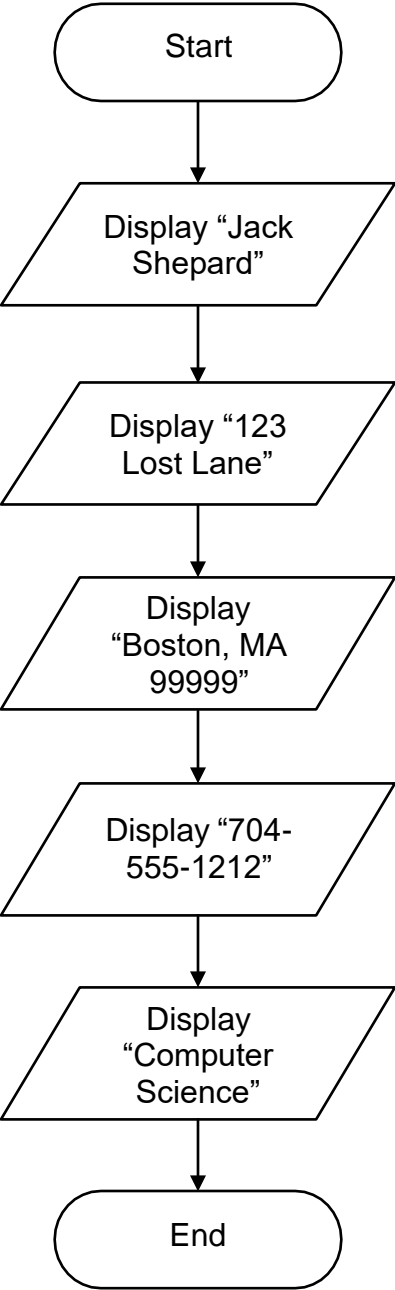
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Solution Manual:

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Programming Exercise 2-1

```
print ("Jack Shepard")
print ("123 Lost Lane")
print ("Boston, MA 99999")
print ("704-555-1212")
print ("Computer Science")
```



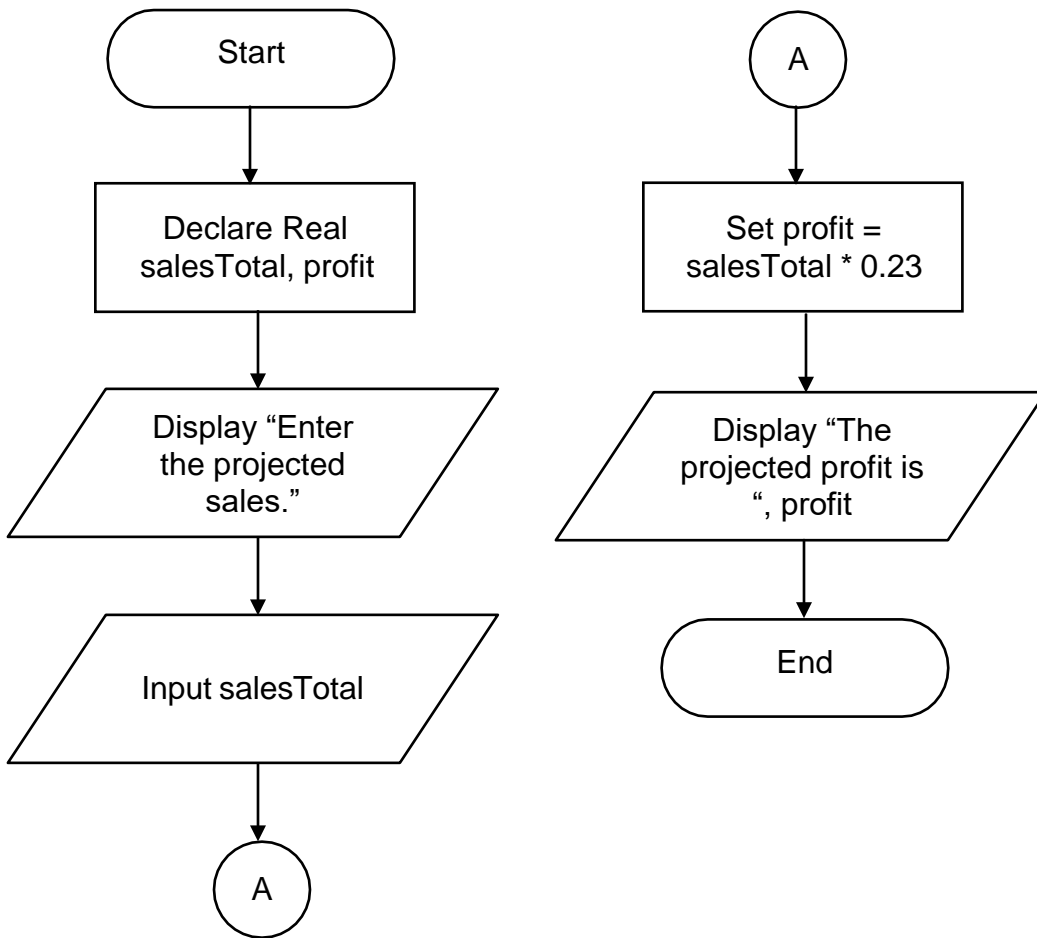
Programming Exercise 2-2

```
# Variables to hold the sales total and the profit
salesTotal = 0.0
profit = 0.0

# Get the amount of projected sales.
salesTotal = float(input("Enter the projected sales: "))

# Calculate the projected profit.
profit = salesTotal * 0.23

# Print the projected profit.
print ("The projected profit is ", format(profit, '.2f'))
```



Programming Exercise 2-3

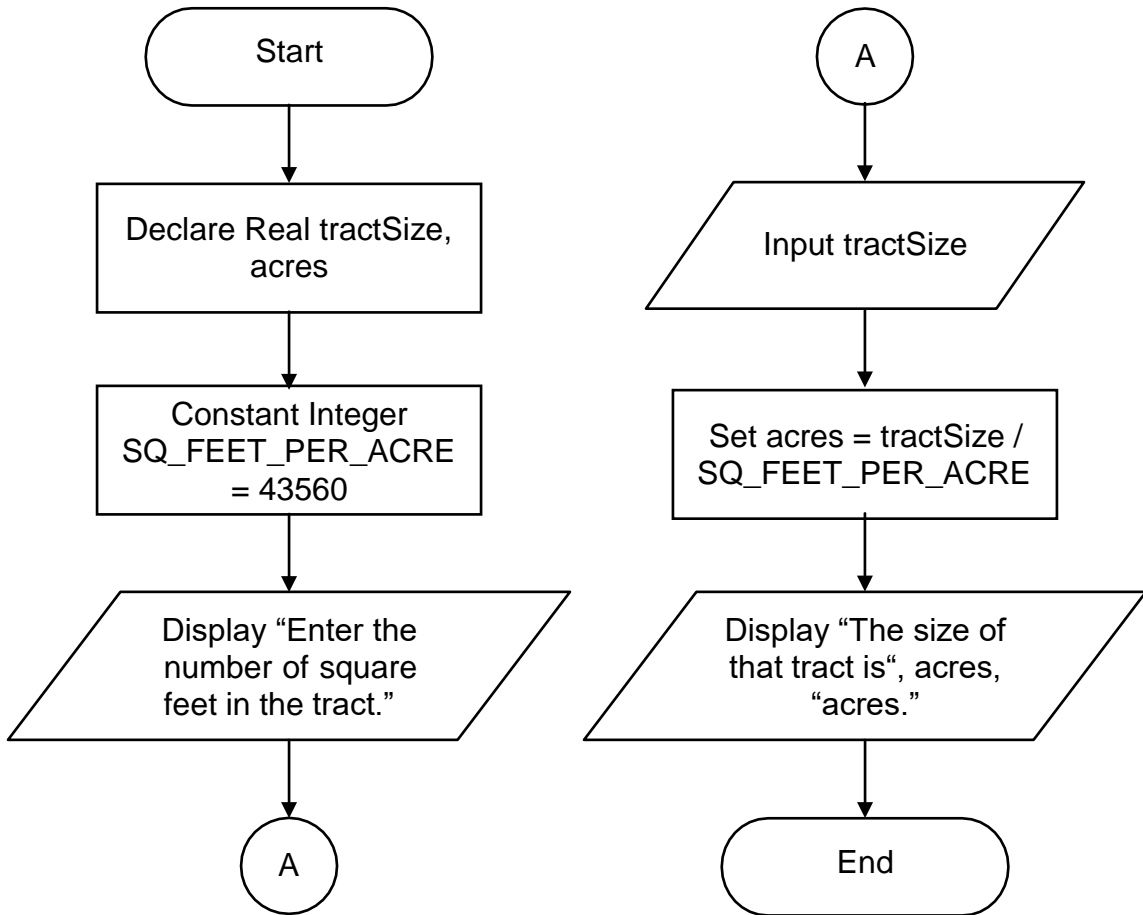
```
# Variables to hold the size of the tract and number of acres.
tractSize = 0.0
acres = 0.0

# Constant for the number of square feet in an acre.
SQ_FEET_PER_ACRE = 43560

# Get the square feet in the tract.
tractSize = input("Enter the number of square feet in the
tract.")

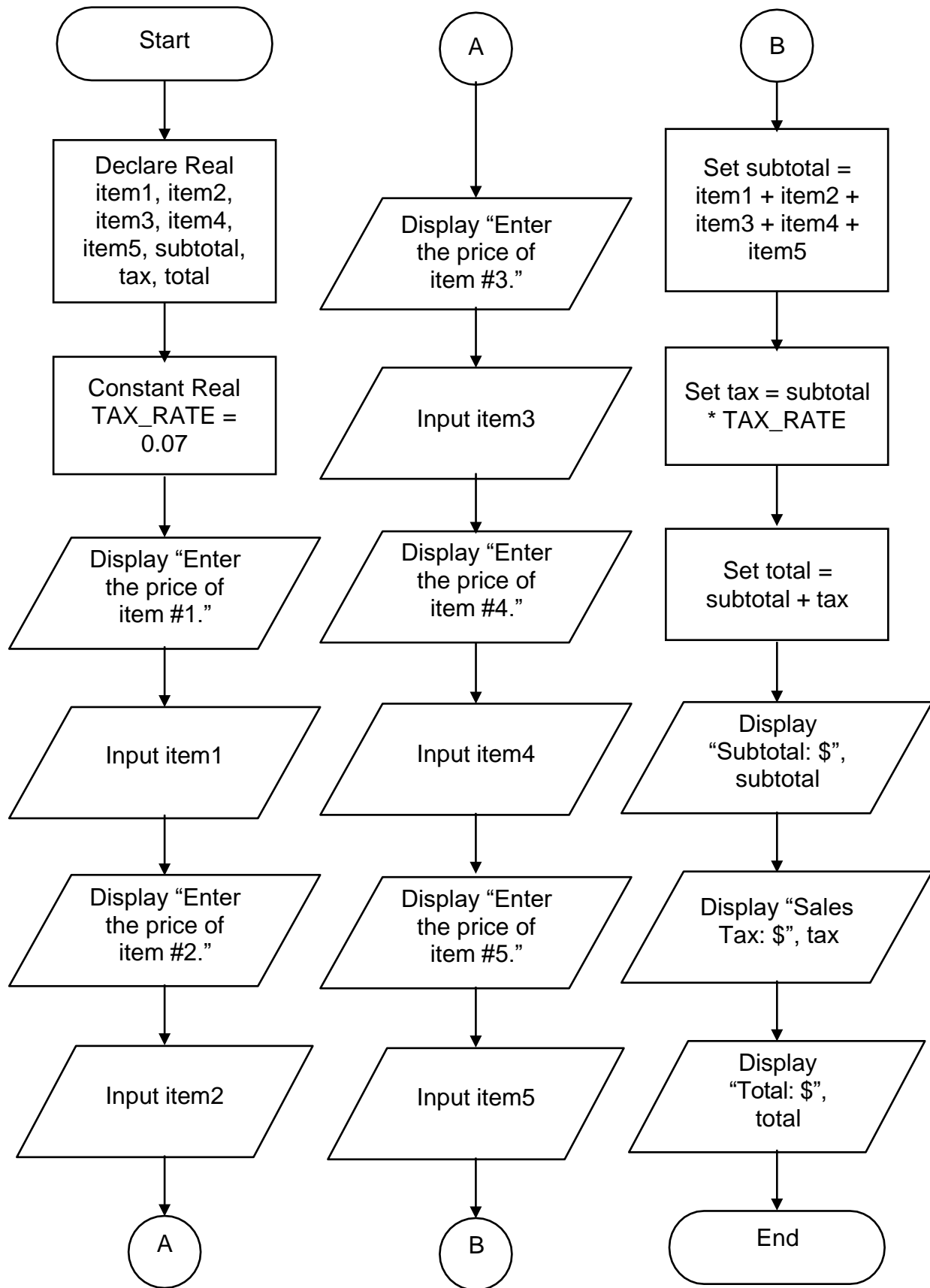
# Calculate the acreage.
acres = float(tractSize) / SQ_FEET_PER_ACRE

# Print the number of acres.
print ("The size of that tract is", format(acres, '.2f'),
"acres.")
```



Programming Exercise 2-4

```
# Variables to hold the prices of each item, the subtotal,  
# and the total.  
item1 = 0.0  
item2 = 0.0  
item3 = 0.0  
item4 = 0.0  
item5 = 0.0  
subtotal = 0.0  
tax = 0.0  
total = 0.0  
  
# Constant for the sales tax rate.  
TAX_RATE = 0.07  
  
# Get the price of each item.  
item1 = float(input("Enter the price of item #1: "))  
item2 = float(input("Enter the price of item #2: "))  
item3 = float(input("Enter the price of item #3: "))  
item4 = float(input("Enter the price of item #4: "))  
item5 = float(input("Enter the price of item #5: "))  
  
# Calculate the subtotal.  
subtotal = item1 + item2 + item3 + item4 + item5  
  
# Calculate the sales tax.  
tax = subtotal * TAX_RATE  
  
# Calculate the total.  
total = subtotal + tax  
  
# Print the values.  
print ("Subtotal: ", format(subtotal, '.2f'))  
print ("Sales Tax: ", format(tax, '.2f'))  
print ("Total: ", format(total, '.2f'))
```



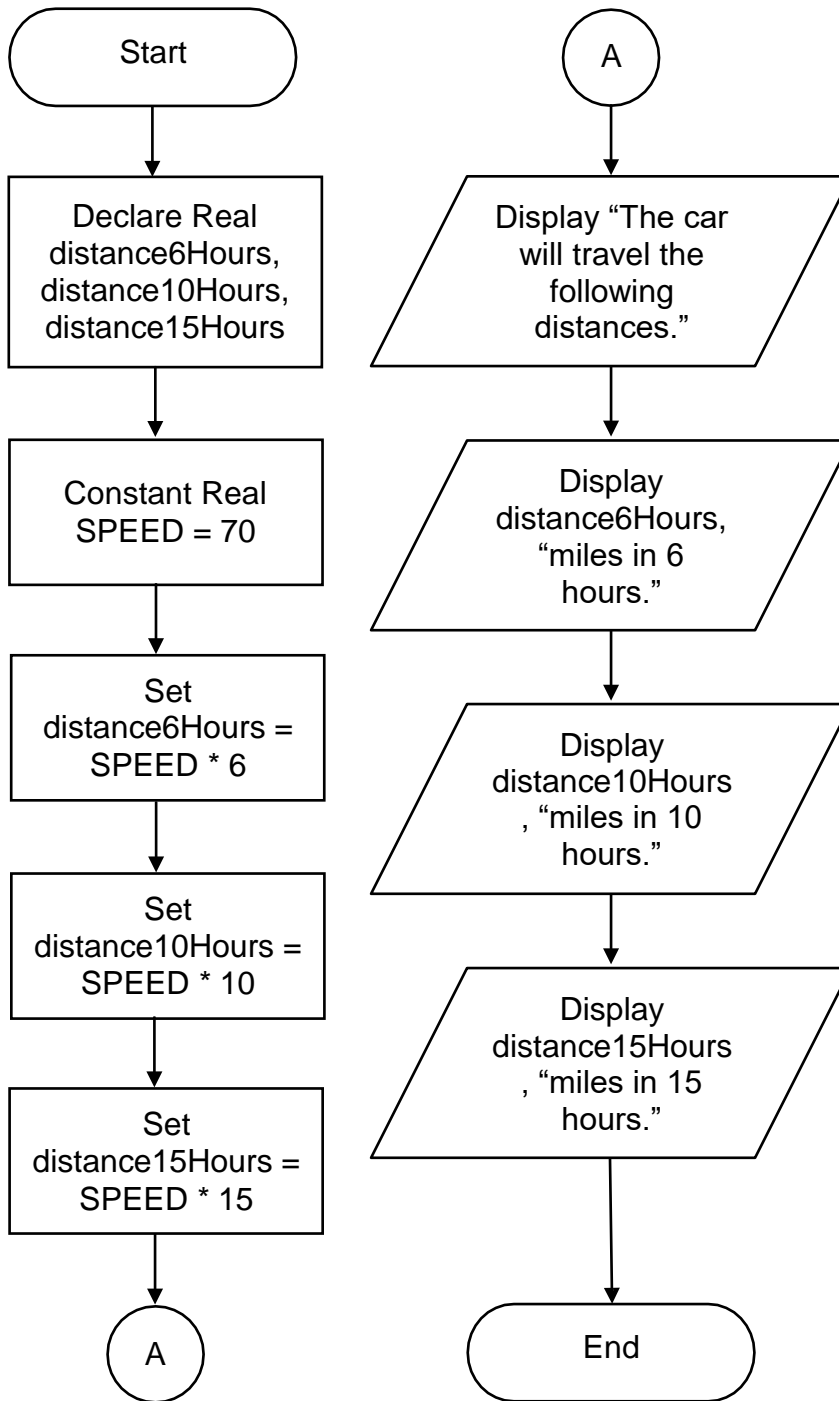
Programming Exercise 2-5

```
# Variables to hold the distances.
distance6Hours = 0.0
distance10Hours = 0.0
distance15Hours = 0.0

# Constant for the speed.
SPEED = 70

# Calculate the distance the car will travel in
# 6, 10, and 15 hours.
distance6Hours = SPEED * 6
distance10Hours = SPEED * 10
distance15Hours = SPEED * 15

# Print the results.
print ("The car will travel the following distances:")
print (distance6Hours,"miles in 6 hours.")
print (distance10Hours,"miles in 10 hours.")
print (distance15Hours,"miles in 15 hours.")
```



Programming Exercise 2-6

```
# Variable declarations
purchase = 0.0
stateTax = 0.0
countyTax = 0.0
totalTax = 0.0
totalSale = 0.0

# Constants for the state and county tax rates
STATE_TAX_RATE = 0.05
COUNTY_TAX_RATE = 0.025

# Get the amount of the purchase.
purchase = float(input("Enter the amount of the purchase: "))

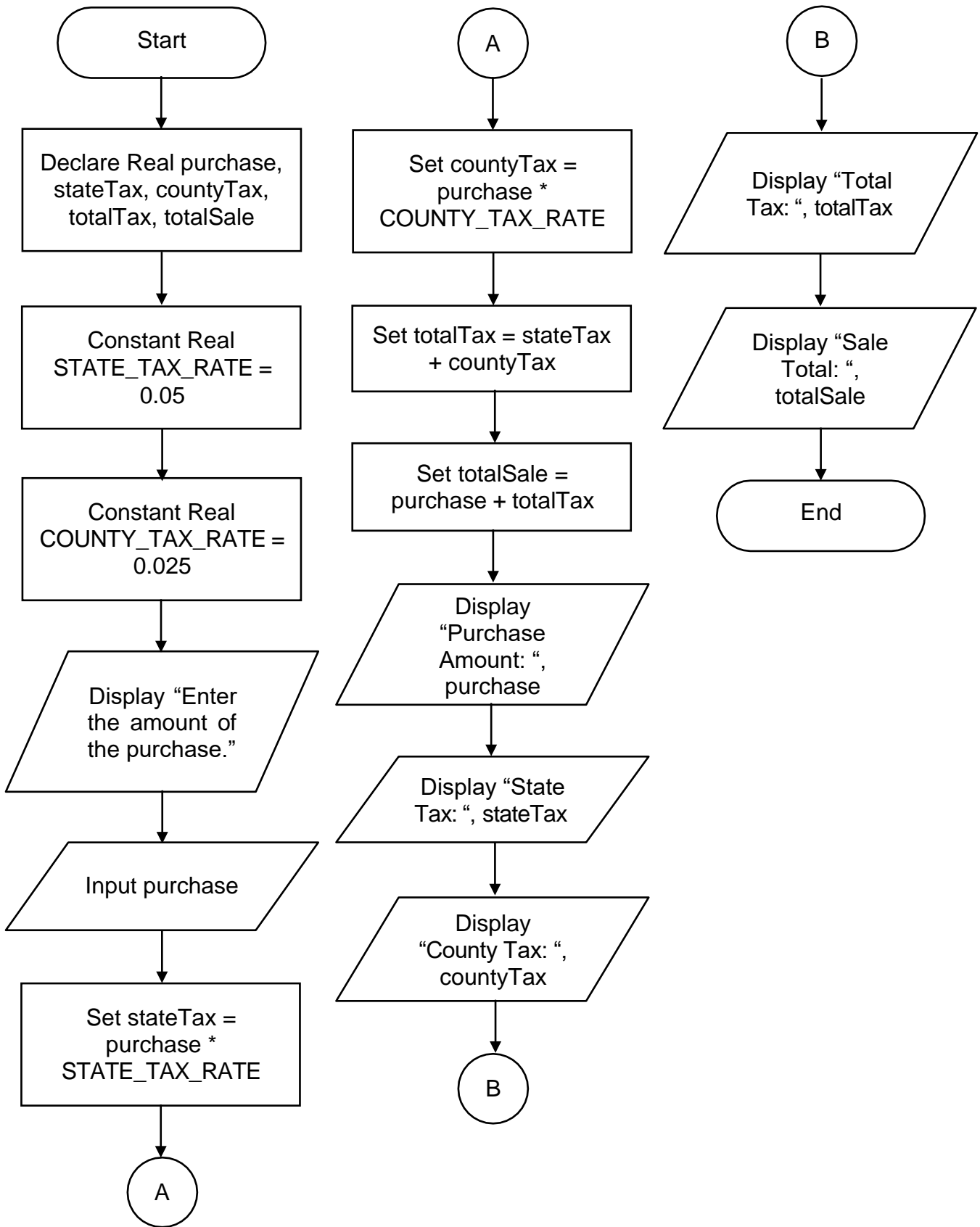
# Calculate the state sales tax.
stateTax = purchase * STATE_TAX_RATE

# Calculate the county sales tax.
countyTax = purchase * COUNTY_TAX_RATE

# Calculate the total tax.
totalTax = stateTax + countyTax

# Calculate the total of the sale.
totalSale = purchase + totalTax

# Print information about the sale.
print ("Purchase Amount:", format(purchase, '.2f'))
print ("State Tax:", format(stateTax, '.2f'))
print ("County Tax:", format(countyTax, '.2f'))
print ("Total Tax:", format(totalTax, '.2f'))
print ("Sale Total:", format(totalSale, '.2f'))
```



Programming Exercise 2-7

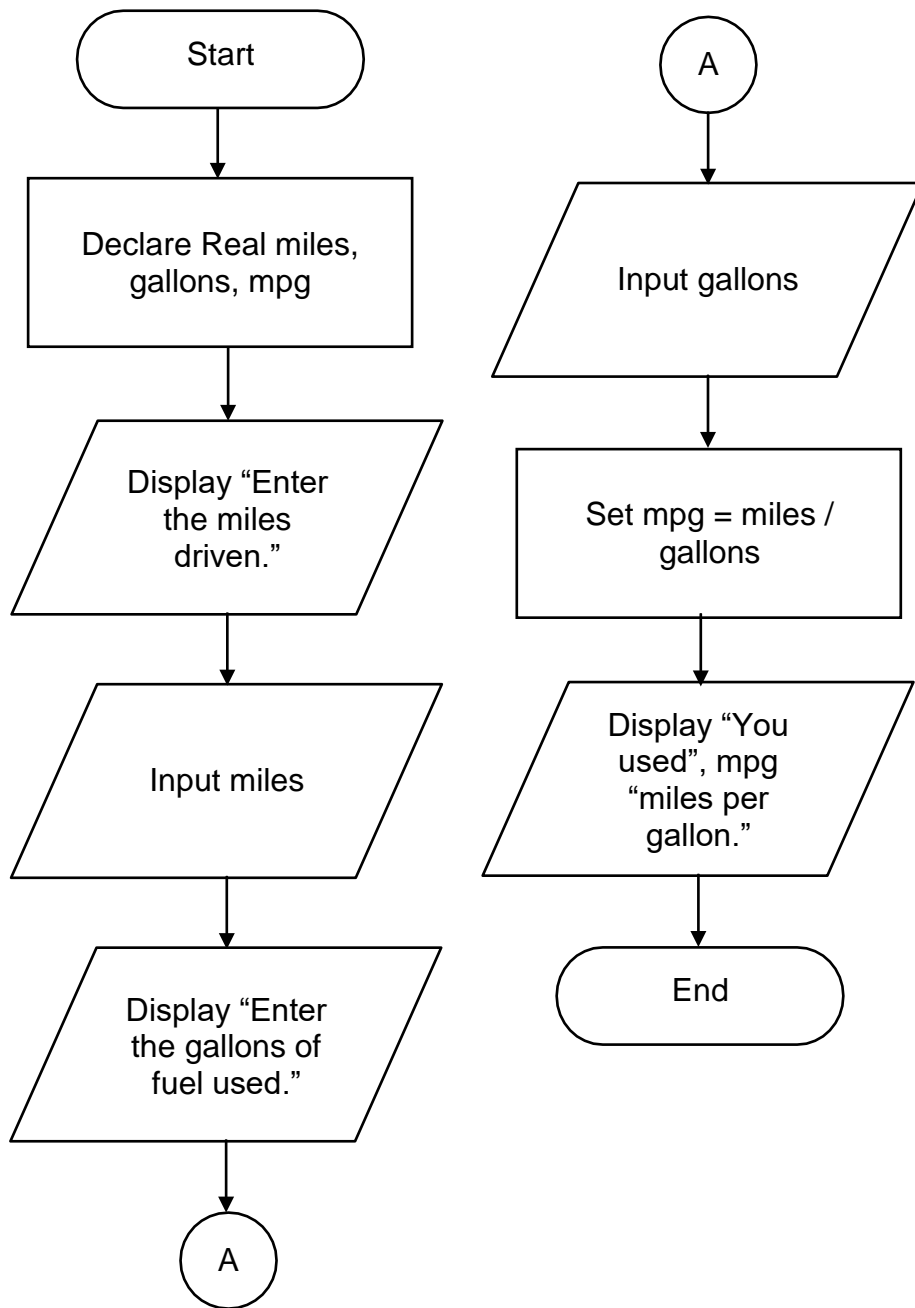
```
# Declare variables to hold miles driven, gallons
# of fuel used, and miles-per-gallon.
miles = 0.0
gallons = 0.0
mpg = 0.0

# Get the miles driven.
miles = float(input("Enter the miles driven: "))

# Get the gallons of fuel used.
gallons = float(input("Enter the gallons of fuel used: "))

# Calculate miles-per-gallon.
mpg = miles / gallons

# Print the result.
print ("You used", format(mpg, '.2f'), "miles per gallon.")
```



Programming Exercise 2-8

```
# Declare variables for food charges, tip, tax, and total.
food = 0.0
tip = 0.0
tax = 0.0
total = 0.0

# Constants for the tax rate and tip rate.
TAX_RATE = 0.07
TIP_RATE = 0.18

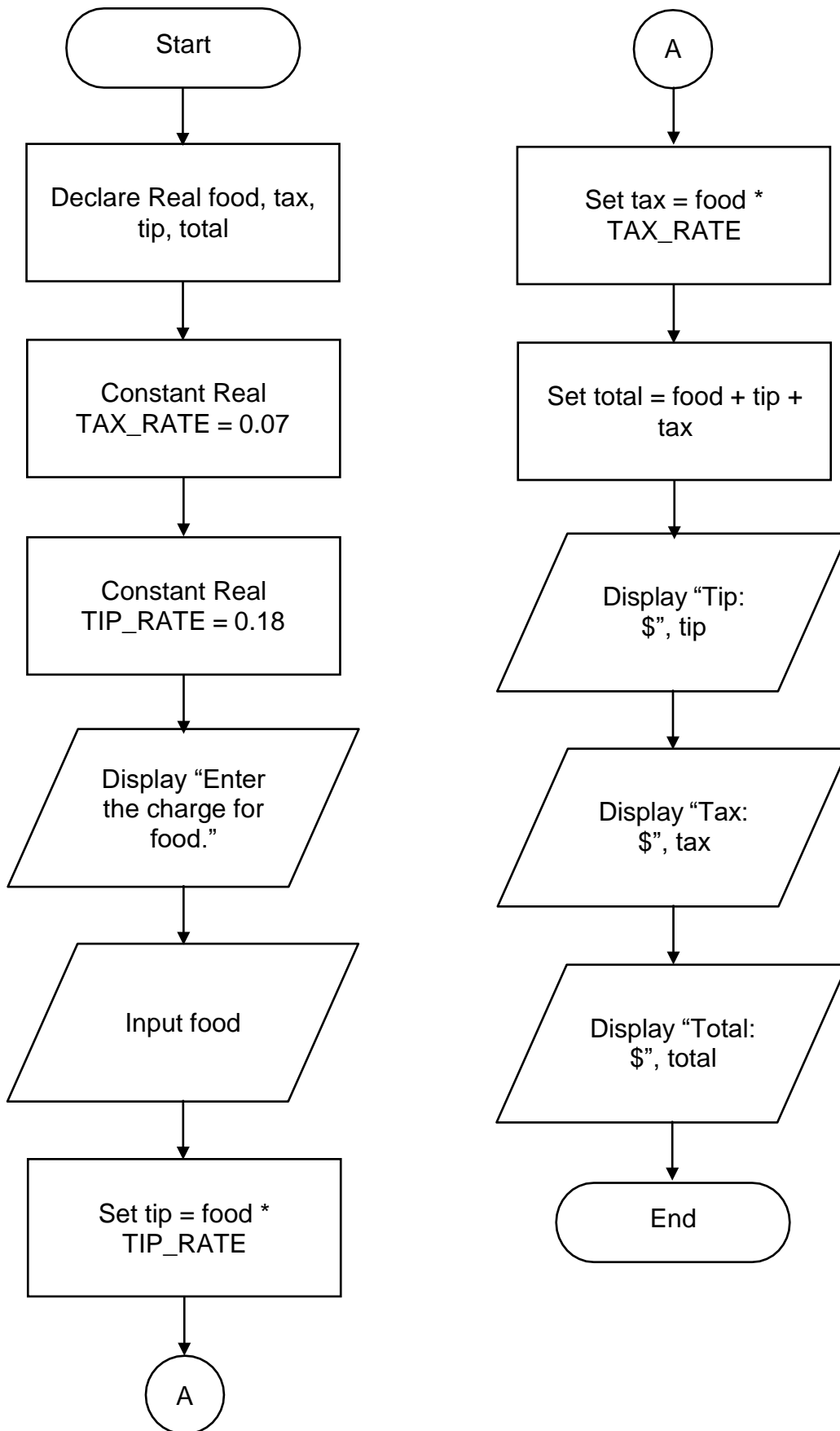
# Get the food charges.
food = float(input("Enter the charge for food: "))

# Calculate the tip.
tip = food * TIP_RATE

# Calculate the tax.
tax = food * TAX_RATE

# Calculate the total.
total = food + tip + tax

# Print the tip, tax, and total.
print ("Tip: $", format(tip, '.2f'))
print ("Tax: $", format(tax, '.2f'))
print ("Total: $", format(total, '.2f'))
```



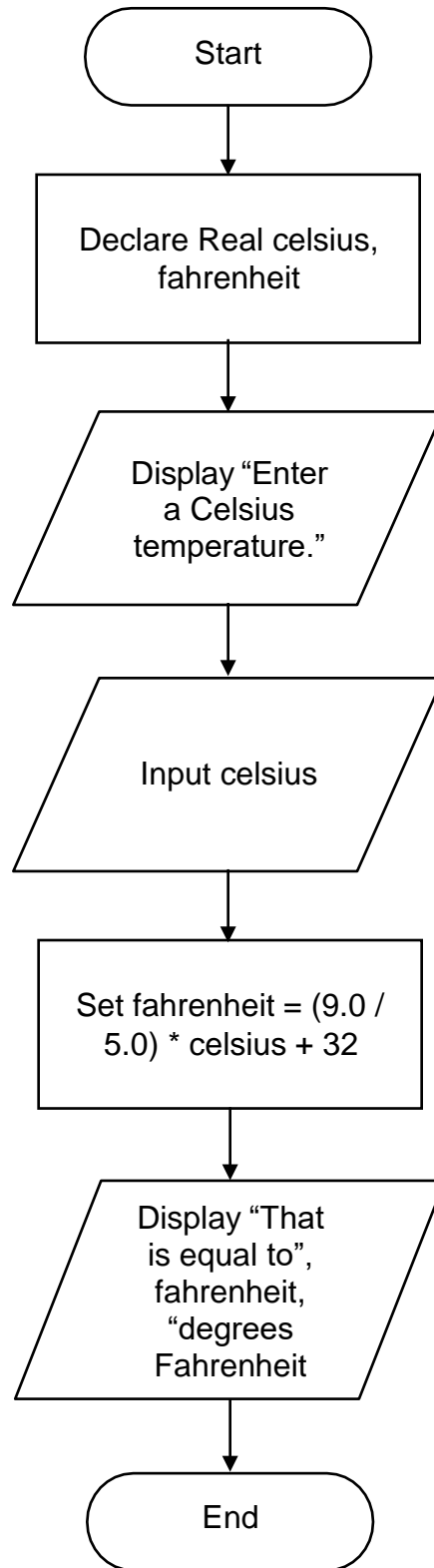
Programming Exercise 2-9

```
# Declare variables to hold the temperatures.
celsius = 0.0
fahrenheit = 0.0

# Get the Celsius temperature.
celsius = float(input("Enter a Celsius temperature: "))

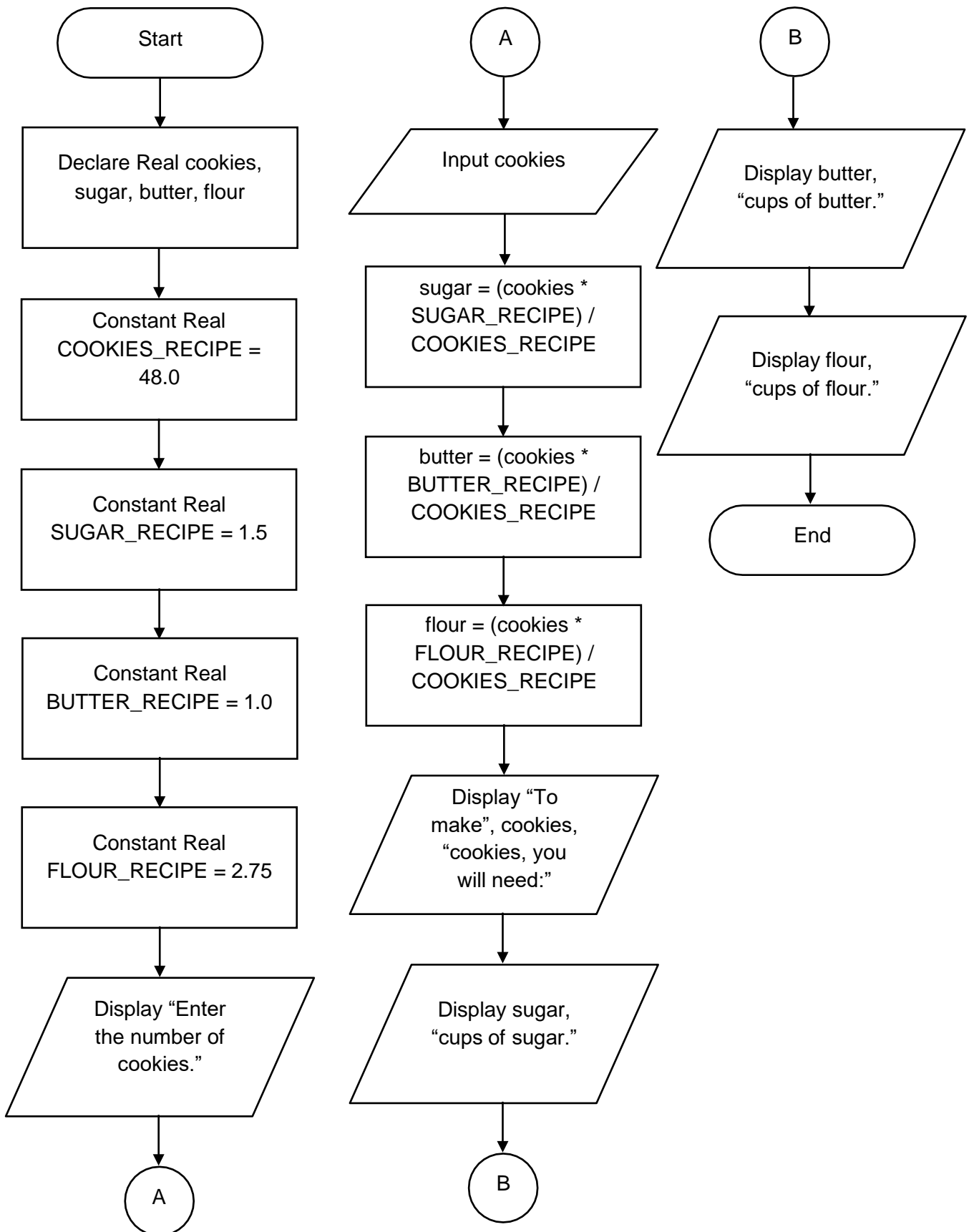
# Calculate the Fahrenheit equivalent.
fahrenheit = (9.0 / 5.0) * celsius + 32

# Display the Fahrenheit temperature.
print ("That is equal to", format(fahrenheit, '.2f'), "degrees
Fahrenheit.")
```



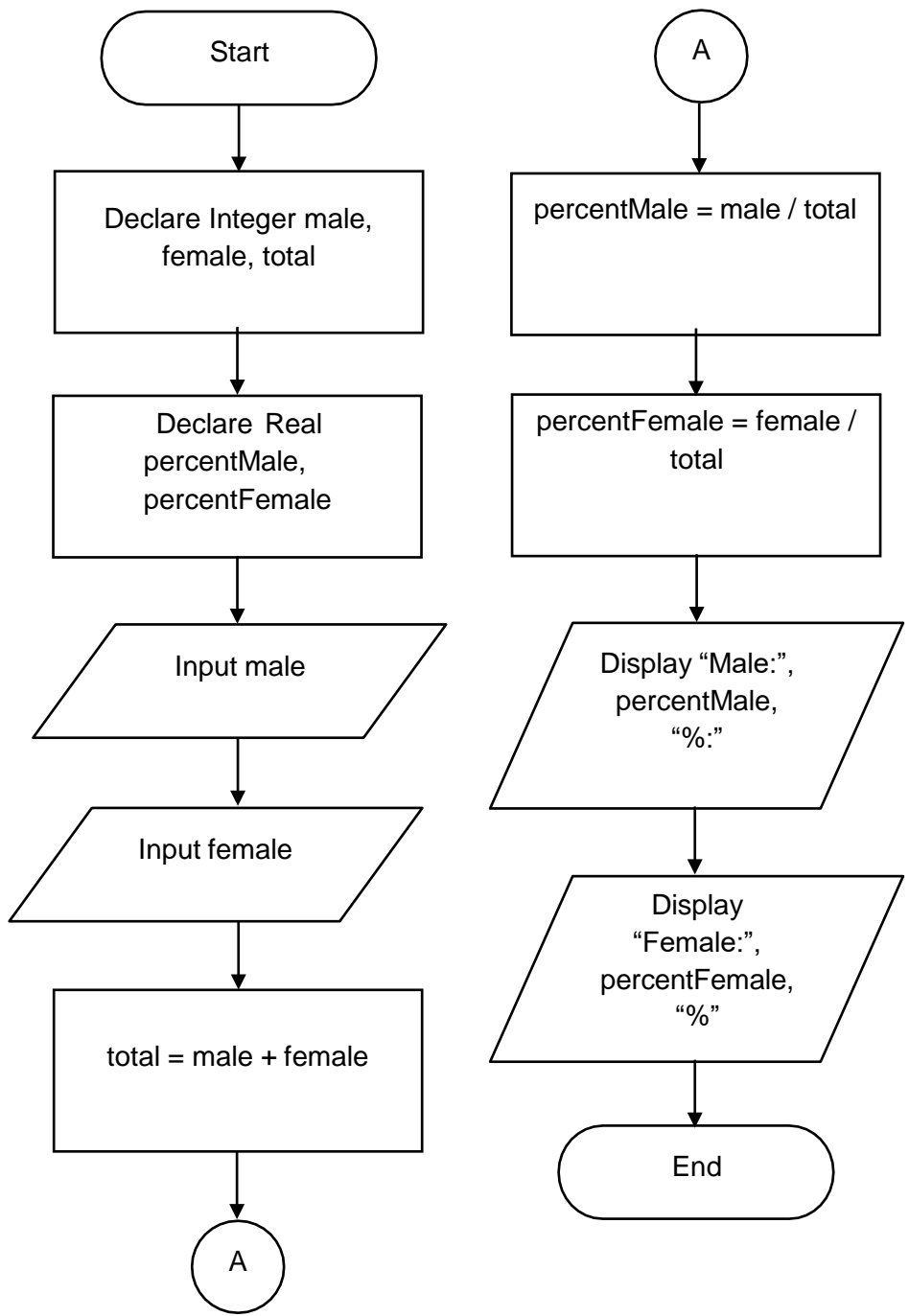
Programming Exercise 2-10

```
# Variables for the number of cookies,  
# cups of sugar, butter, and flour.  
cookies = 0.0  
sugar = 0.0  
butter = 0.0  
flour = 0.0  
  
# Constants for the number of cookies, cups  
# of sugar, butter, and flour in the original recipe.  
COOKIES_RECIPE = 48.0  
SUGAR_RECIPE = 1.5  
BUTTER_RECIPE = 1.0  
FLOUR_RECIPE = 2.75  
  
# Get the number of cookies.  
cookies = float(input("Enter the number of cookies: "))  
  
# Calculate the cups of sugar needed to make the cookies.  
sugar = (cookies * SUGAR_RECIPE) / COOKIES_RECIPE  
  
# Calculate the cups of butter needed to make the cookies.  
butter = (cookies * BUTTER_RECIPE) / COOKIES_RECIPE  
  
# Calculate the cups of flour needed to make the cookies.  
flour = (cookies * FLOUR_RECIPE) / COOKIES_RECIPE  
  
# Print the amount of butter, sugar, and flour needed  
# to make the specified number of cookies.  
print ("To make", cookies, "cookies, you will need:")  
print (format(sugar, '.2f'), "cups of sugar")  
print (format(butter, '.2f'), "cups of butter")  
print (format(flour, '.2f'), "cups of flour")
```



Programming Exercise 2-11

```
# Variables for the number of male and female students,  
# total number of students, and the percentage of male  
# and female students.  
male = 0  
female = 0  
total = 0  
percentMale = 0.0  
percentFemale = 0.0  
  
# Get the number of male students.  
male = int(input("Enter the number of male students: "))  
  
# Get the number of female students.  
female = int(input("Enter the number of female students: "))  
  
# Calculate the total number of students.  
total = male + female  
  
# Calculate the percentage of male students.  
percentMale = male / total  
  
# Calculate the percentage of female students.  
percentFemale = female / total  
  
# Print the percentage of male students.  
print("Male:", format(percentMale, '.2f'), "%")  
  
# Print the percentage of female students.  
print("Female:", format(percentFemale, '.2f'), "%")
```



Programming Exercise 2-12

```
# Named constants
COMMISSION_RATE = 0.03
NUM_SHARES = 2000
PURCHASE_PRICE = 40.0
SELLING_PRICE = 42.75

# Variables
amountPaidForStock = 0.0 # Amount paid for the stock
purchaseCommission = 0.0 # Commission paid to purchase stock
totalPaid = 0.0          # Total amount paid
stockSoldFor = 0.0       # Amount stock sold for
sellingCommission = 0.0   # Commission paid to sell stock
totalReceived = 0.0      # Total amount received
profitOrLoss = 0.0       # Amount of profit or loss

# Calculate the amount that Joe paid for the stock, not
# including the commission.
amountPaidForStock = NUM_SHARES * PURCHASE_PRICE

# Calculate the amount of commission that Joe paid his broker
# when he bought the stock.
purchaseCommission = COMMISSION_RATE * amountPaidForStock

# Calculate the total amount that Joe paid, which is the amount
# he paid for the stock plus the commission he paid his broker.
totalPaid = amountPaidForStock + purchaseCommission

# Calculate the amount that Joe sold the stock for.
stockSoldFor = NUM_SHARES * SELLING_PRICE

# Calculate the amount of commission that Joe paid his broker
# when he sold the stock.
sellingCommission = COMMISSION_RATE * stockSoldFor

# Calculate the amount of money left over, after Joe paid
# his broker.
totalReceived = stockSoldFor - sellingCommission

# Calculate the amount of profit or loss. If this amount is a
# positive number, it is profit. If this is a negative number it
# is a loss.
profitOrLoss = totalReceived - totalPaid

# Print the required data.
print ("Amount paid for the stock: $", format(amountPaidForStock, '.2f'))
print ("Commission paid on the purchase: $", format(purchaseCommission, '.2f'))
print ("Amount the stock sold for: $", format(stockSoldFor, '.2f'))
print ("Commission paid on the sale: $", format(sellingCommission, '.2f'))
print ("Profit (or loss if negative): $", format(profitOrLoss, '.2f'))
```

