

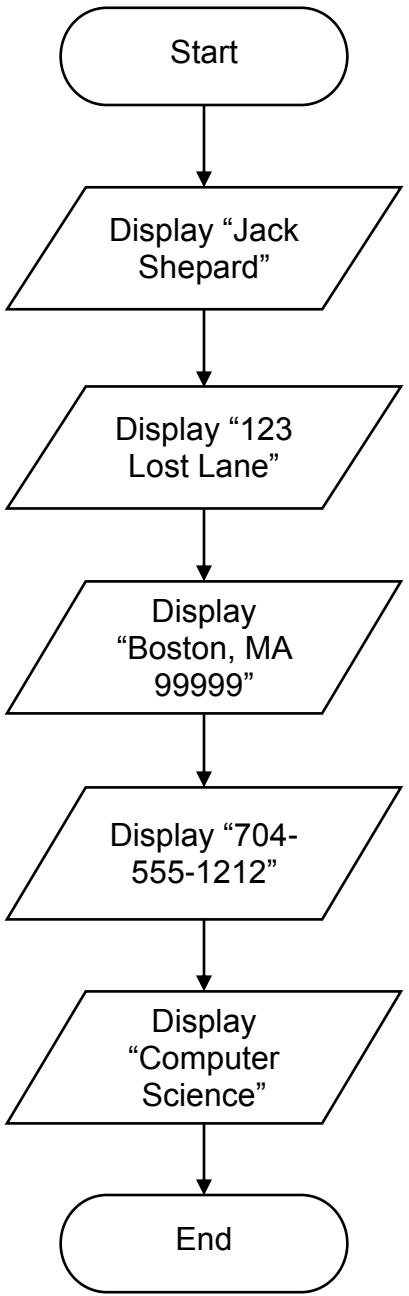
Contact me in order to access the whole complete document. Email: solution9159@gmail.com
WhatsApp: <https://wa.me/message/2H3BV2L5TTSUF1> Telegram: <https://t.me/solutionmanual>

Sample for Solution Manual for Starting Out with Python 4th Global Edition by Tony Gaddis

Solutions to Programming Problems

Programming Exercise 2-1

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



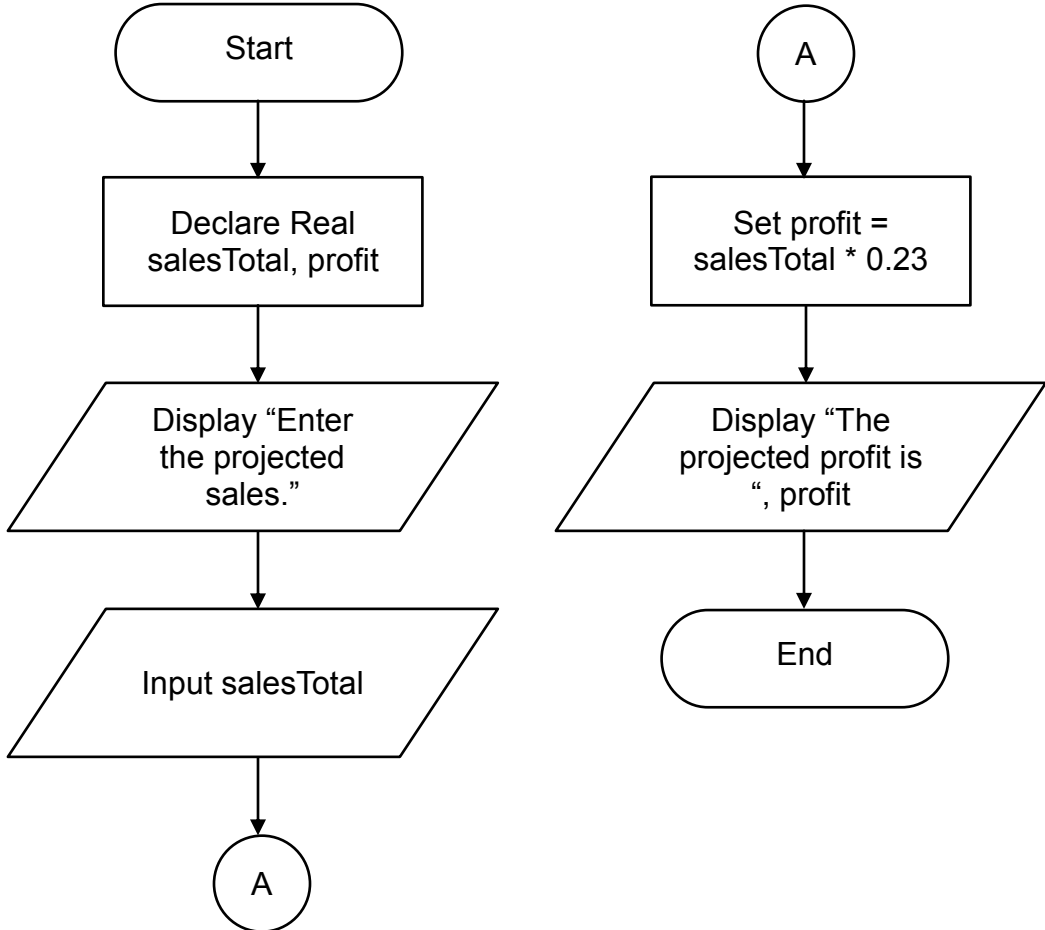
Programming Exercise 2-2

```
# 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

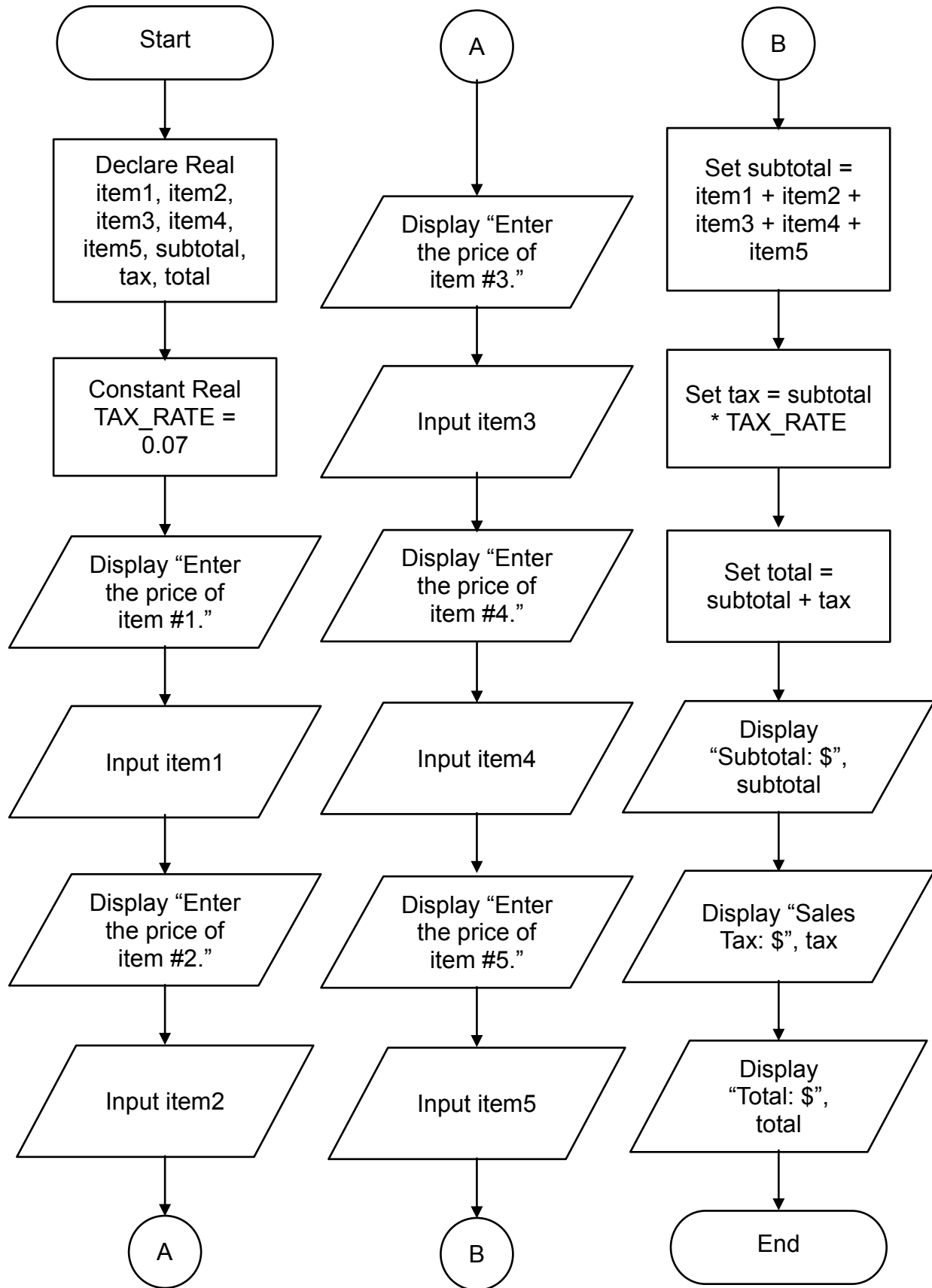
```
# Get the number of pounds.
pounds = input('Enter a value in pounds: ')

# Calculate the amount of kilograms.
kilos = float(pounds) * 0.454

# Print the result.
print(pounds, 'pounds is', format(kilos, '.2f'), 'kilograms.')
```

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'))
```



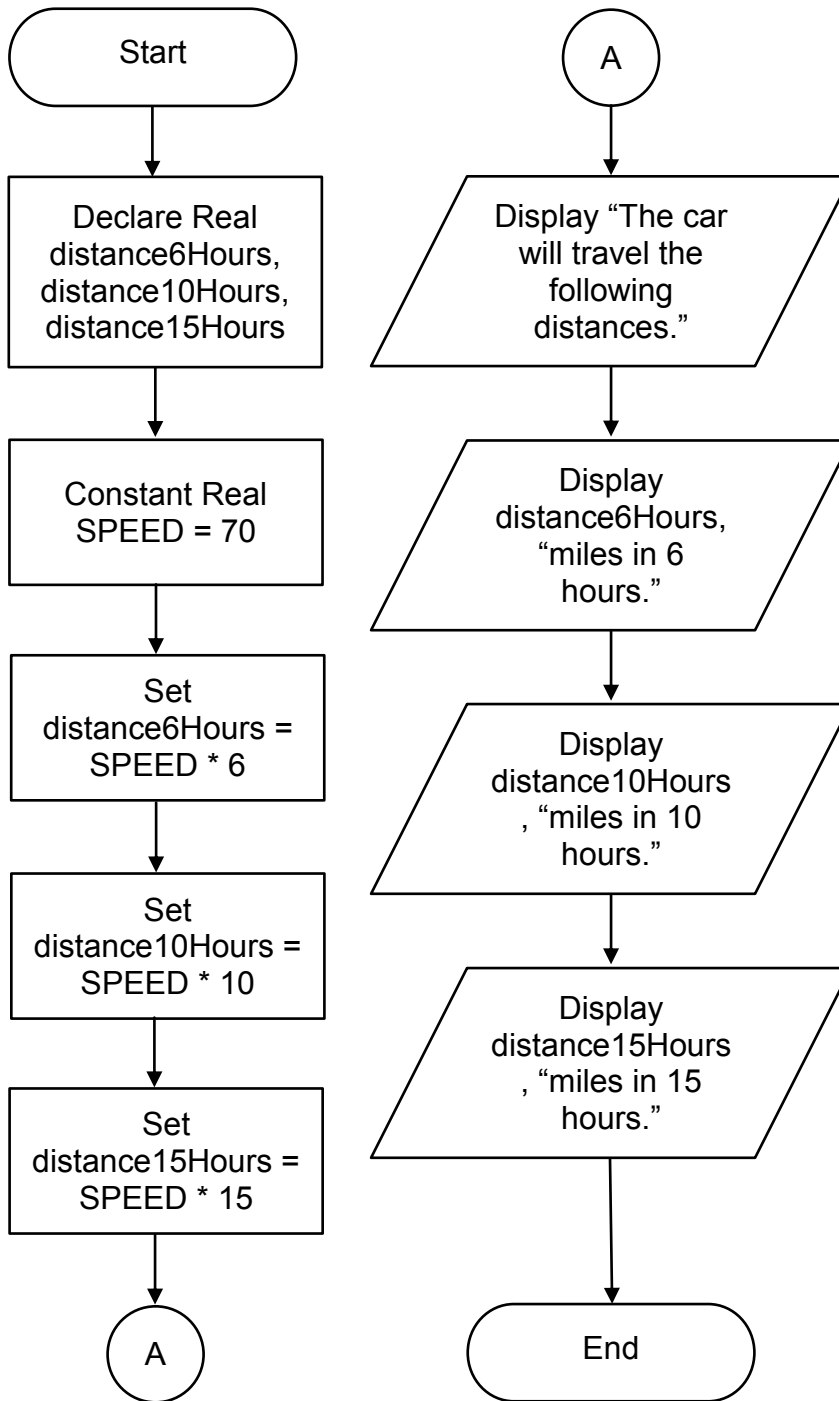
Programming Exercise 2-5

```
# 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

```
# Get the purchase amount and number of instalments.
amount = float(input('Enter the purchase amount: '))
instalments = int(input('Enter the desired number of
instalments: '))

# Calculate the final purchase amount and instalment cost.
finalAmount = amount * 1.05
instalmentCost = finalAmount / instalments

# Print the results.
print('\nFinal purchase amount:', format(finalAmount, '.2f'))
print('Number of instalments:', instalments)
print('Cost per instalment:', format(instalmentCost, '.2f'))
```

Programming Exercise 2-7

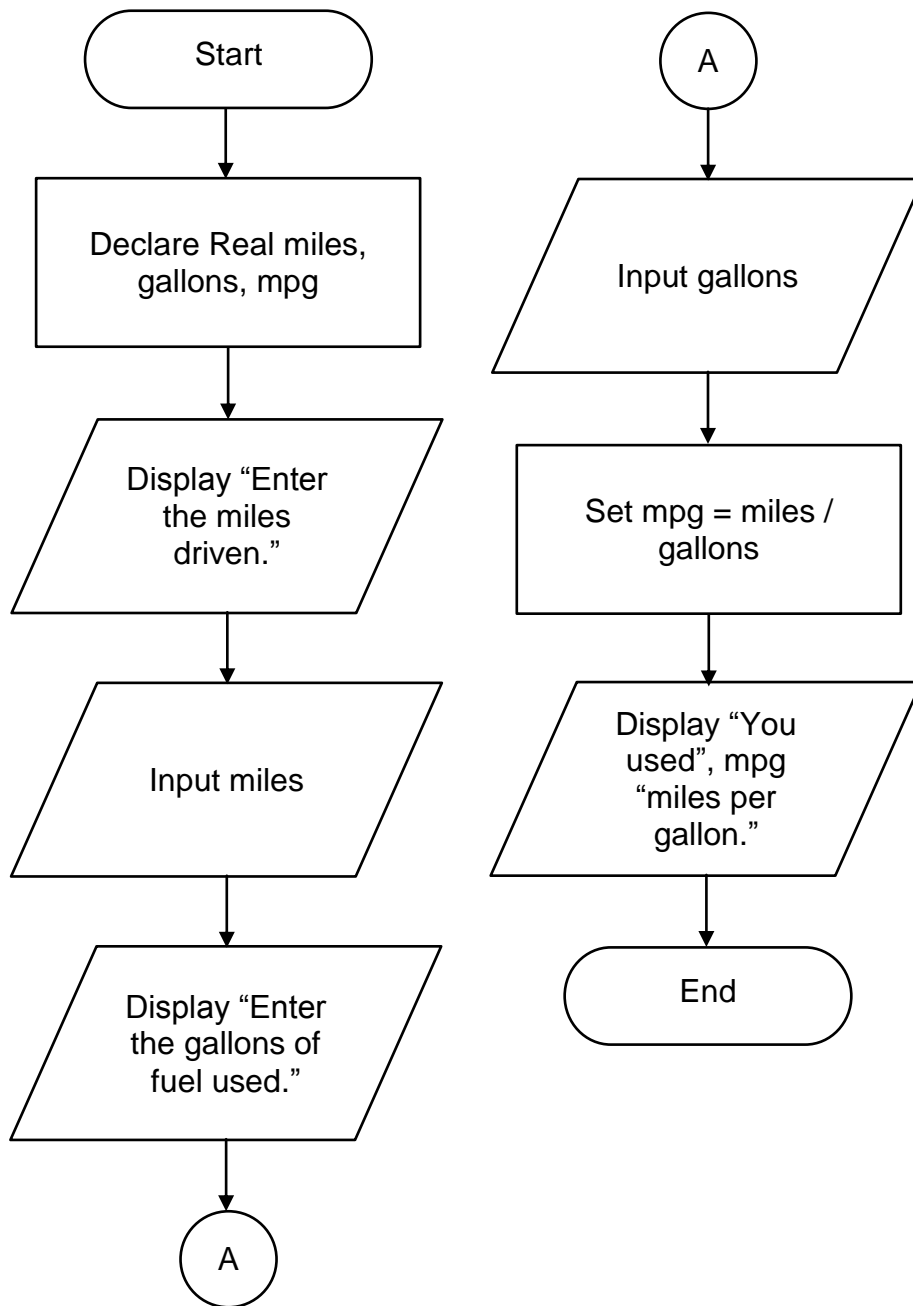
```
# Declare variables to hold miles driven, gallons
# of fuel used, and miles-per-gallon.
miles = 0.0
gallons = 0.0
mpg = 0.0

# 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

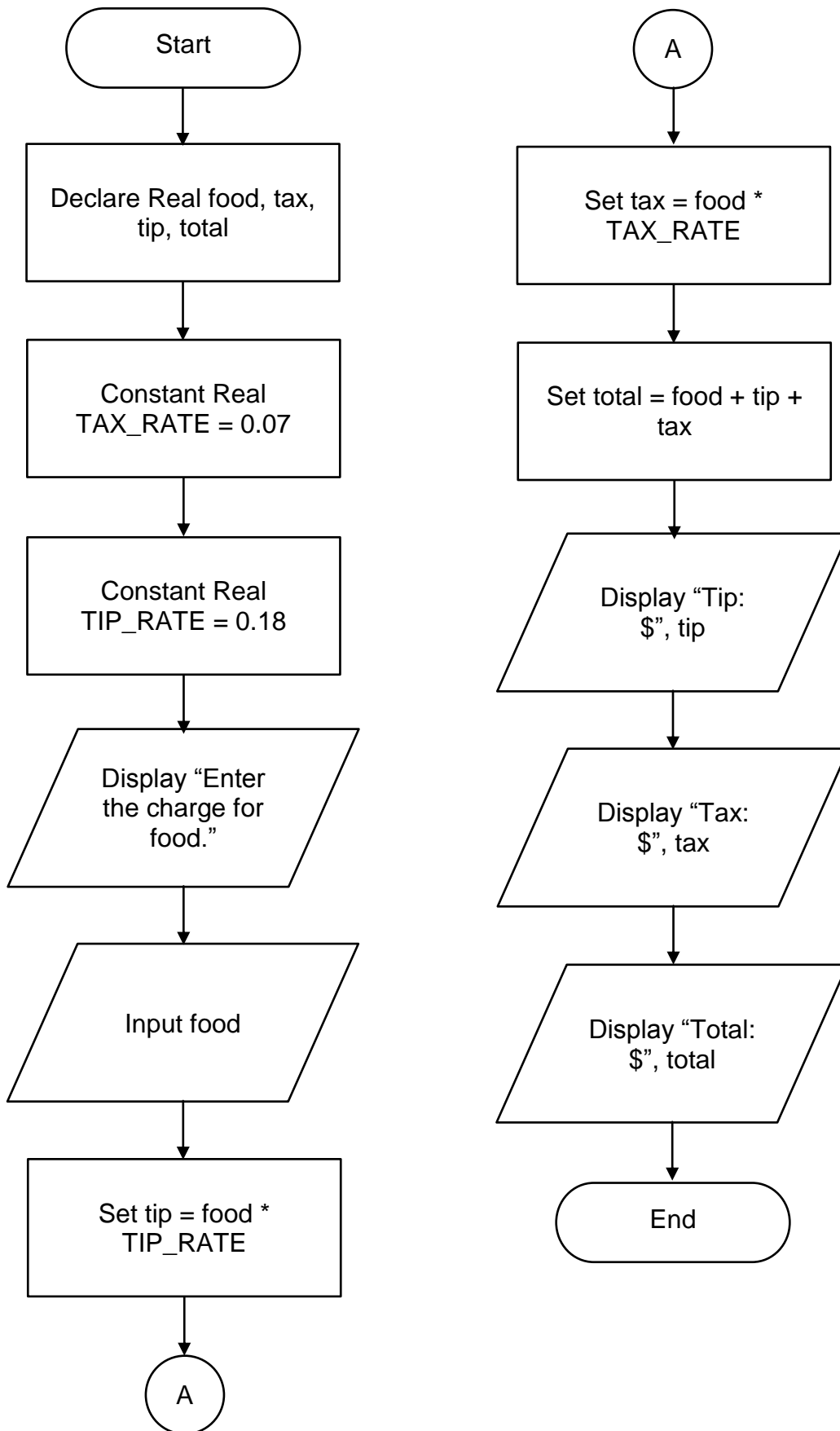
# Get the food charges.
food = float(input("Enter the charge for food: "))

# 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

```
# Import the math module.
import math

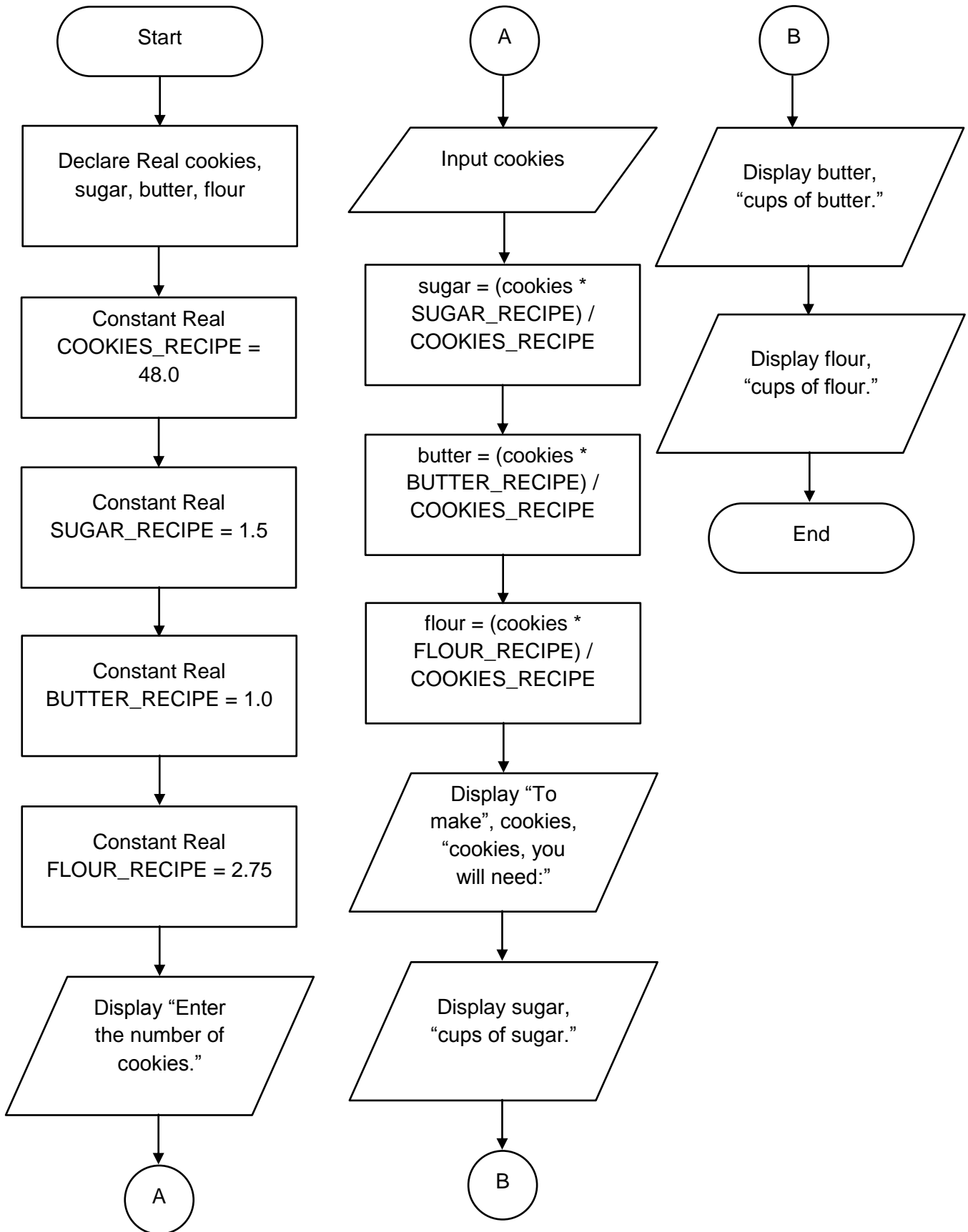
# Get radius from user.
radius = float(input('Enter radius of circle: '))

# Calculate area and circumference of circle.
area = math.pi * radius ** 2
circumference = 2 * math.pi * radius

# Print the results.
print('\nArea of circle:', format(area, '.2f'))
print('Circumference of circle:', format(circumference,
'.2f'))
```

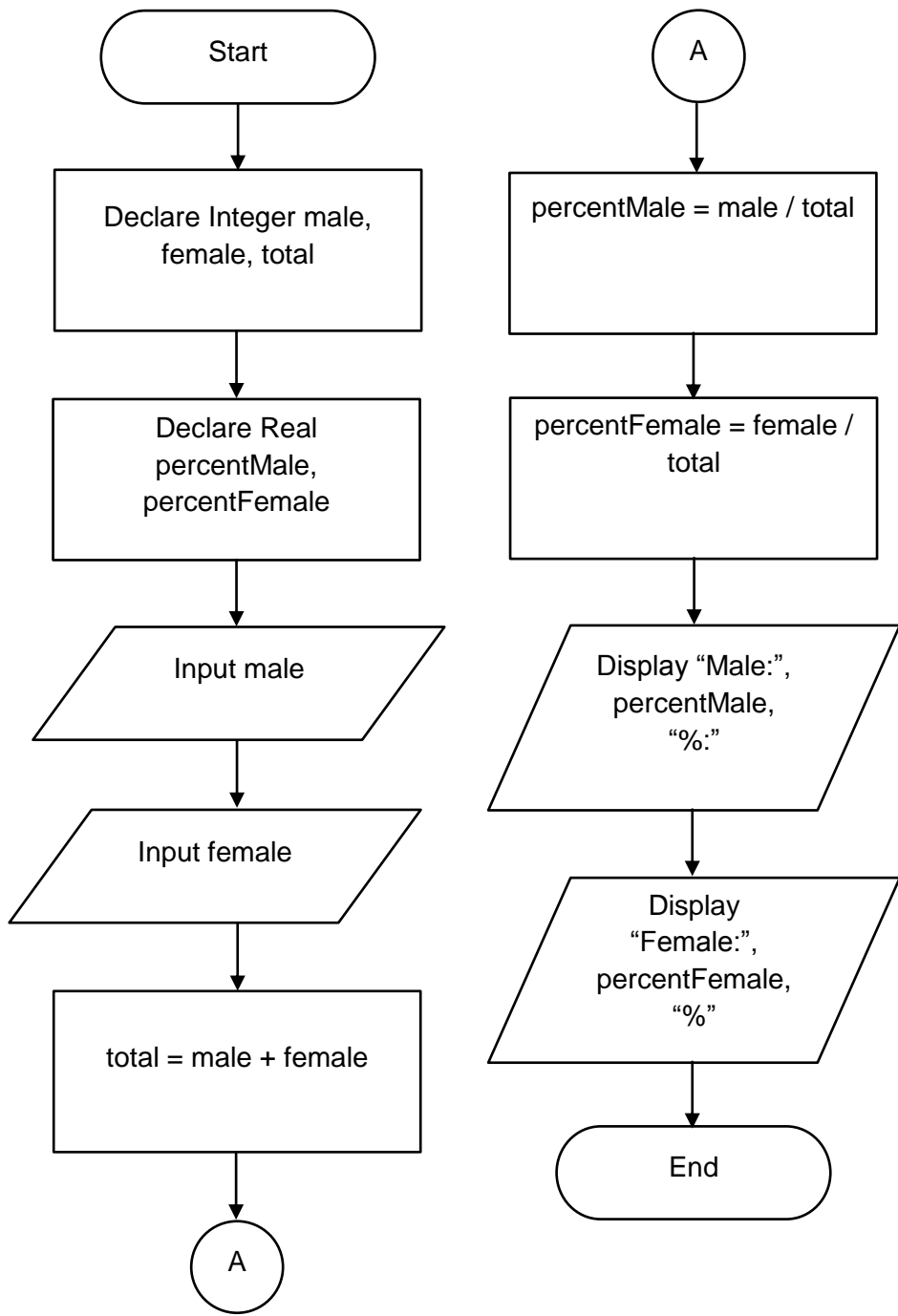
Programming Exercise 2-10

```
# 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

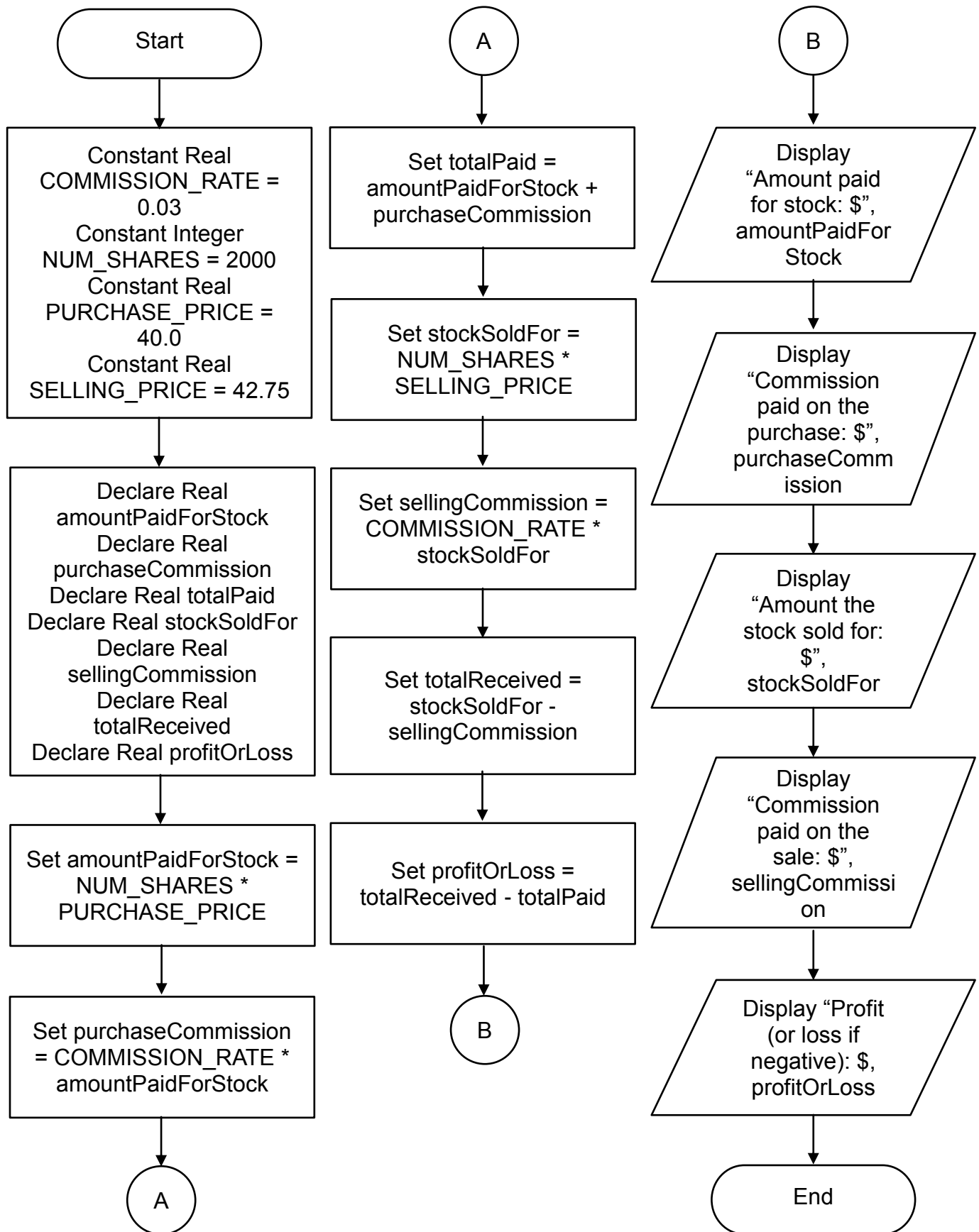
# Calculate the amount that Joe sold the stock for.
stockSoldFor = NUM_SHARES * SELLING_PRICE

# 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'))
```



Exercise 2-13 Planting Grapevines

```
# This program calculates the number of grapevines that
# can be planted in a vineyard row.

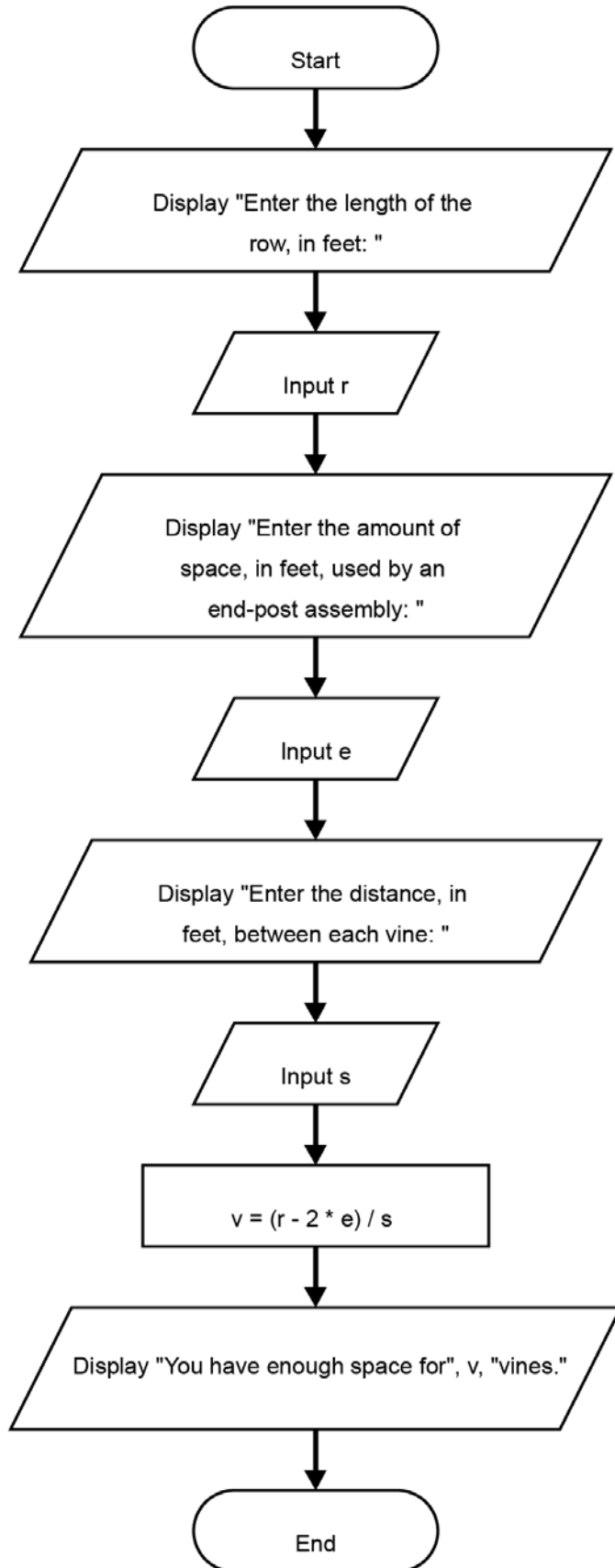
print('Enter the length of the row, in feet: ', end='')
r = float(input())

print('Enter the amount of space, in feet, used by an end-post assembly: ',
end='')
e = float(input())

print('Enter the distance, in feet, between each vine: ', end='')
s = float(input())

# Calculate the number of vines.
v = (r - 2 * e) / s

print('You have enough space for', v, 'vines.')
```



Exercise 2-14 Compound Interest

```
# This program calculates the ending principal in a bank
# account after compounding the interest.

print('Enter the starting principal: ', end='')
p = float(input())

print('Enter the annual interest rate: ', end='')
r = float(input())

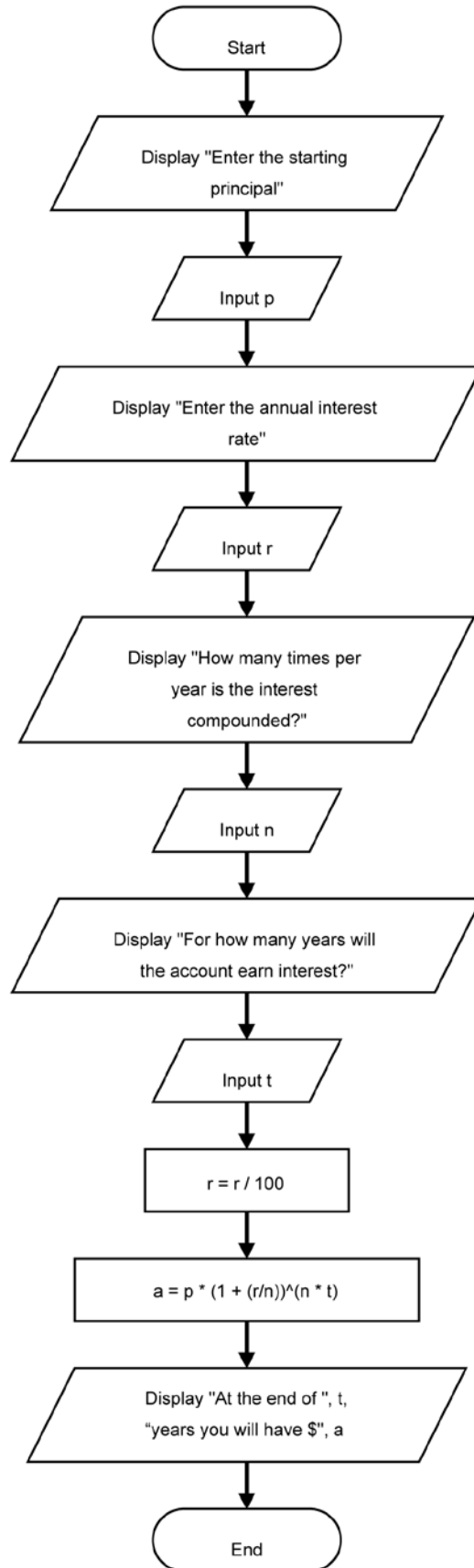
print('How many times per year is the interest compounded? ', end='')
n = int(input())

print('For how many years will the account earn interest? ', end='')
t = int(input())

# Adjust the interest rate.
r = r / 100

# Calculate the ending balance.
a = p * (1 + float(r) / n) ** (n * t)

# Display the ending balance.
print('At the end of', t, 'years you will have $', format(a, ',.2f'))
```



Sample for Answers to Review Questions

Starting Out with Python 4e, GE (Gaddis)

Chapter 1 Introduction to Computers and Programming

TRUE/FALSE

1. A software developer is the person with the training to design, create, and test computer programs.

ANS: T

2. A computer is a single device that performs different types of tasks for its users.

ANS: F

3. All programs are normally stored in ROM and are loaded into RAM as needed for processing.

ANS: F

4. The instruction set for a microprocessor is unique and is typically understood only by the microprocessors of the same brand.

ANS: T

5. The CPU understands instructions written in a binary machine language.

ANS: T

6. A bit that is turned off is represented by the value **-1**.

ANS: F

7. The main reason to use secondary storage is to hold data for long periods of time, even when the power supply to the computer is turned off.

ANS: T

8. RAM is a volatile memory used for temporary storage while a program is running.

ANS: T

9. The Python language uses a compiler which is a program that both translates and executes the instructions in a high-level language.

ANS: F

10. IDLE is an alternative method to using a text editor to write, execute, and test a Python program.

ANS: T

MULTIPLE CHOICE

1. Programs are commonly referred to as
 - a. system software
 - b. software
 - c. application software
 - d. utility programs

ANS: B

2. Which of the following is considered to be the world's first programmable electronic computer?
 - a. IBM
 - b. Dell
 - c. ENIAC
 - d. Gateway

ANS: C

3. Where does a computer store a program and the data that the program is working with while the program is running?
 - a. in main memory
 - b. in the CPU
 - c. in secondary storage
 - d. in the microprocessor

ANS: A

4. What type of volatile memory is usually used only for temporary storage while running a program?
 - a. ROM
 - b. TMM
 - c. RAM
 - d. TVM

ANS: C

5. Which of the following is not a microprocessor manufacturing company?
 - a. Intel
 - b. Dell
 - c. AMD
 - d. Motorola

ANS: B

6. Which computer language uses short words known as mnemonics for writing programs?
 - a. Assembly
 - b. Java
 - c. Pascal
 - d. Visual Basic

ANS: A

7. The process known as the _____ cycle is used by the CPU to execute instructions in a program.
- decode-fetch-execute
 - decode-execute-fetch
 - fetch-decode-execute
 - fetch-execute-decode

ANS: C

8. Which language is referred to as a low-level language?
- C++
 - Assembly language
 - Java
 - Python

ANS: B

9. The following is an example of an instruction written in which computer language?

10110000

- Assembly language
- Java
- machine language
- C#

ANS: C

10. The encoding technique used to store negative numbers in the computer's memory is called
- Unicode
 - ASCII
 - floating-point notation
 - two's complement

ANS: D

11. The _____ coding scheme contains a set of 128 numeric codes that are used to represent characters in the computer's memory.
- Unicode
 - ASCII
 - ENIAC
 - two's complement

ANS: B

12. The smallest storage location in a computer's memory is known as a
- byte
 - letter
 - switch
 - bit

ANS: D

13. What is the largest value that can be stored in one byte?
- 255**

- b. **128**
- c. **8**
- d. **65535**

ANS: A

14. The disk drive is a secondary storage device that stores data by _____ encoding it onto a spinning circular disk.
- a. electrically
 - b. magnetically
 - c. digitally
 - d. optically

ANS: B

15. A _____ has no moving parts and operates faster than a traditional disk drive.
- a. DVD drive
 - b. solid state drive
 - c. jumper drive
 - d. hyper drive

ANS: B

16. Which of the following is not a major component of a typical computer system?
- a. the CPU
 - b. main memory
 - c. the operating system
 - d. secondary storage devices

ANS: C

17. Which type of error prevents the program from running?
- a. syntax
 - b. human
 - c. grammatical
 - d. logical

ANS: A

18. What is the decimal value of the following binary number?

10011101

- a. **157**
- b. **8**
- c. **156**
- d. **28**

ANS: C

MULTIPLE RESPONSE

1. Select all that apply. To create a Python program you can use
- a. a text editor

- b. a word processor if you save your file as a .docx
- c. IDLE
- d. Excel

ANS: A, C

COMPLETION

1. A(n) _____ is a set of instructions that a computer follows to perform a task.

ANS: program

2. The term _____ refers to all the physical devices that make up a computer.

ANS: hardware

3. The _____ is the part of the computer that actually runs programs and is the most important component in a computer.

ANS: central processing unit, CPU

4. A disk drive stores data by _____ encoding it onto a circular disk.

ANS: magnetically

5. _____ are small central processing unit chips.

ANS: Microprocessors

6. _____ is a type of memory that can hold data for long periods of time, even when there is no power to the computer.

ANS: Secondary storage

7. Main memory is commonly known as _____.

ANS: random-access memory, RAM

8. USB drives store data using _____ memory.

ANS: flash

9. The Python _____ is a program that can read Python programming statements and execute them.

ANS: interpreter

10. In _____ mode, the interpreter reads the contents of a file that contains Python statements and executes each statement.

ANS: script