Chapter 5 Control Statements: Part 2

Section 5.2 Essentials of Counter-Controlled Repetition

5.2 Q1: Counter-controlled repetition requires

a. A control variable and initial value.

b. A control variable increment (or decrement).

c. A condition that tests for the final value of the control variable.

d. All of the above.

Answer: d) all of the above

5.2 Q2: The control variable of a counter-controlled loop should be declared as \_\_\_\_\_\_\_\_to prevent errors.

a. int.

b. float.

c. double.

d. Any of the above.

Answer: a) int

Section 5.3 for Repetition Statement

5.3 Q1: Consider the following two Java code segments:

Segment 1 Segment 2

int i = 0;

for ( int i = 0; i <= 20; i++ )

while ( i < 20 ) {

{System.out.println( i );

i++; }

System.out.println( i );

}

Which of the following statements are true?

a. The output from these segments is not the same.

b. The scope of the control variable i is different for the two segments.

c. Both (a) and (b) are true.

d. Neither (a) nor (b) is true.

Answer: a

5.3 Q2: Consider the classes below:

public class TestA

{

public static void main( String args[] )

{

int x = 2, y = 20, counter = 0;

for ( int j = y % x; j < 100; j += ( y / x ) )

counter++;

} // end main

} // end class TestA

public class TestB

{

public static void main(String args[])

{

int counter = 0;

for ( int j = 10; j > 0; --j )

++counter;

} // end main

} // end class TestB

Which of the following statements is true?

a. The value of counter will be different at the end of each for loop for each class.

b. The value of j will be the same for each loop for all iterations

c. Both (a) and (b) are true.

d. Neither (a) nor (b) is true.

Answer: d

Section 5.4 Examples Using the for Statement

5.4 Q1: Which of the following for-loop control headers results in equivalent numbers of iterations:

A. for ( int q = 1; q <= 100; q++ )

B. for ( int q = 100; q >= 0; q-- )

C. for ( int q = 99; q > 0; q -= 9 )

D. for ( int q = 990; q > 0; q -= 90 )

a. A and B.

b. C and D.

c. A and B have equivalent iterations and C and D have equivalent iterations.

d. None of the loops have equivalent iterations.

Answer: a) A and B

5.4 Q2: Which of the following will count down from 10 to 1 correctly?

a. for ( int j = 10; j <= 1; j++ )

b. for ( int j = 1; j <= 10; j++ )

c. for ( int j = 10; j > 1; j-- )

d. for ( int j = 10; j >= 1; j-- )

answer: d

Application: Summing the Even Integers from 2 to 20

5.4 Q3: Which of the following is equivalent to this code segment?

int total = 0;

for ( int i = 0; i <= 20; i += 2 )

total += i;

a. int total = 0;

for ( int i = 20; i < 0; i += 1 )

total += i;

b. int total = 0;

for ( int i = 0; i <= 20; total += i, i += 2 );

c. int total = 0;

for ( int i = 0, i <= 20, total += i; i += 2 );

d. int total = 0;

for ( int i = 2; i < 20; total += i, i += 2 );

answer: d

Application: Compound Interest Calculations

5.4 Q4: Which statement prints the floating-point value 123.456 right justified with a field width of 10?

a. System.out.printf( “%d10.3”, 123.456 );

b. System.out.printf( “%10.3d”, 123.456 );

c. System.out.printf( “%f10.3”, 123.456 );

d. System.out.printf( “%10.3f”, 123.456 );

answer: d

5.4 Q5: Which formatting flag indicates that the floating-point values should be output with a thousands separator?

a. plus (+).

b. minus (-).

c. comma (,).

d. period (.).

answer: c) comma (,)

Section 5.5 do…while Repetition Statement

5.5 Q1: Which of the following statements about a do…while repetition statement is true?

a. The body of a do…while loop is executed only if the terminating condition is true.

b. The body of a do…while loop is executed only once.

c. The body of a do…while loop is always executed at least once.

d. None of the above.

Answer: c

5.5 Q2: Which of the following will not help prevent infinite loops?

a. Include braces around the statements in a do…while statement.

b. Ensure that the header of a for or while statement is not followed by a semicolon.

c. If the loop is counter-controlled, the body of the loop should increment or decrement the counter as needed.

d. If the loop is sentinel-controlled, ensure that the sentinel value is input eventually.

Answer:

Section 5.6 switch Multiple-Selection Statement

GradeBook Class with switch Statement to Count A, B, C, D and F Grades

5.6 Q1: For the two code segments below:

Segment A

int q = 5;

switch( q )

{

case 1:

System.out.println( 1 );

case 2:

System.out.println( 2 );

case 3:

System.out.println( 3 );

case 4:

System.out.println( 4 );

case 5:

System.out.println( 5 );

default:

System.out.println( "default" );

} // end switch

Segment B

q = 4;

switch( q )

{

case 1:

System.out.println( 1 );

case 2:

System.out.println( 2 );

case 3:

System.out.println( 3 );

case 4:

System.out.println( 4 );

case 5:

System.out.println( 5 );

default:

System.out.println( "default" );

} // end switch

Which of the following statements is true?

a. The output for Segment A is:

default

b. The output for Segment B is:

4

c. The output for Segment B is:

45default

d. The output for Segment A is:

5

default

answer: a

5.6 Q2: For the code segment below:

switch( q )

{

case 1:

System.out.println( "apple" );

break;

case 2:

System.out.println( "orange" );

break;

case 3:

System.out.println( "banana" );

break;

case 4:

System.out.println( "pear" );

case 5:

System.out.println( "grapes" );

default:

System.out.println( "kiwi" );

} // end switch

Which of the following values for q will result in kiwi being included in the output?

a. 2.

b. Anything greater than or equal to 4.

c. 1.

d. 3.

answer: b

switch Statement UML Activity Diagram

5.6 Q1: Which of the following can be used in a switch statement in the expression after keyword case?

A. a constant integral expression.

B. a character constant.

C. a string (but only in Java SE 7).

D. an enumeration constant.

a. A and B.

b. A and C.

c. B and C.

d. All.

Answer: d) all

Using Strings in switch Statements (New in Java SE 7)

5.6 Q1: Which of the following statements about the switch statement (as used in Java SE 7) is false?

a. You can use Strings in a switch statement's controlling expression.

b. You can use a String in a switch statement's case label.

c. You can use a comma-separated list of Strings in a switch statement's case label.

d. You cannot use a String in a switch statement's default case.

Answer:

Section 5.7 break and continue Statements

break Statement

5.7 Q1: Which of the following statements about the break statement is false?

e. The break statement is used to exit a repetition structure early and continue execution after the loop.

f. A break statement can only break out of an immediately enclosing while, for, do…while or switch statement.

g. The break statement, when executed in a while, for or do…while, skips the remaining statements in the loop body and proceeds with the next iteration of the loop.

h. Common uses of the break statement are to escape early from a loop or to skip the remainder of a switch.

Answer:

continue Statement

5.7 Q2: Which of the following statements about the continue statement is true?

a. The continue statement is used to exit a repetition structure early and continue execution after the loop.

b. The continue statement is used to continue after a switch statement.

c. The continue statement does not alter the flow of control.

d. A continue statement proceeds with the next iteration of the immediately enclosing while, for, do…while statement.

Answer:

5.7 Q3: To exit out of a loop completely, and resume the flow of control at the next line in the method, use \_\_\_\_\_\_\_.

a. A continue statement.

b. A break statement.

c. A return statement.

d. Any of the above..

answer: b

Section 5.8 Logical Operators

Conditional OR (||) Operator

5.8 Q1: Consider the code segment below.

if ( gender == 1 )

{

if ( age >= 65 )

++seniorFemales;

} // end if

This segment is equivalent to which of the following?

a. if ( gender == 1 || age >= 65 )

++seniorFemales;

b. if ( gender == 1 && age >= 65 )

++seniorFemales;

c. if ( gender == 1 AND age >= 65 )

++seniorFemales;

d. if ( gender == 1 OR age >= 65 )

++seniorFemales;

answer: a

Short-Circuit Evaluation of Complex Conditions

5.8 Q2: Suppose variable gender is MALE and age equals 60, how is the expression

( gender == FEMALE ) && ( age >= 65 )

evaluated?

a. The condition ( gender == FEMALE ) is evaluated first and the evaluation stops immediately.

b. The condition ( age >= 65 ) is evaluated first and the evaluation stops immediately.

c. Both conditions are evaluated, from left to right.

d. Both conditions are evaluated, from right to left.

Answer: a

Boolean Logical AND (&) and Boolean Logical OR (|) Operators

5.8 Q3: Which case of the following would warrant using the boolean logical inclusive OR (|) rather than the conditional OR (||)?

a. Testing if two conditions are both true.

b. Testing if at least one of two conditions is true.

c. Testing if at least one of two conditions is true when the right operand has a required side effect.

d. Testing if at least one of two conditions is true when the left operand has a required side effect..

answer:

Logical Negation (!) Operator

5.8 Q4: Which expression is equivalent to if ( ! ( grade == sentinelValue ) )?

a. if ( grade !== sentinelValue ).

b. if ( grade != sentinelValue ).

c. ! if ( grade == sentinelValue ).

d. ! if ( grade !== sentinelValue ).

answer: b

Logical Operators Example

5.8 Q5: The boolean values can be displayed with the \_\_\_\_\_\_\_\_ format specifier.

a. %bool.

b. %b.

c. %true.

d. %boolean.

Answer: %b

Section 5.9 Structured Programming Summary

5.9 Q1: Which statement below is false?

a. Structured programming produces programs that are easier to test.

b. Structured programming requires four forms of control.

c. Structured programming produces programs that are easier to modify

d. Structured programming promotes simplicity.

Answer:

5.9 Q2: Which of the following is not a type of repetition statement in Java?

a. while statement.

b. do…while statement.

c. for statement.

d. loop statement.

Answer: d

Section 5.10 (Optional) GUI and Graphics Case Study: Drawing Rectangles and Ovals

5. 10 Q1: Method drawOval’s arguments specify \_\_\_\_\_\_\_\_.

a. the upper-left and upper-right corners of the oval.

b. the upper-left corner, scale and size of the oval.

c. the position and size of the bounding rectangle for the oval.

d. the position and size of the bounding cycle for the oval.

Answer:

5.10 Q2: The first statement in every paintComponent method should be a call to \_\_\_\_\_\_\_\_.

a. super

b. super.paintComponent

c. clear

d. update

answer:

Chapter 6 Methods: A Deeper Look

Section 6.2 Program Modules in Java

6.2 Q1: Information is passed to a method in:

a. the method name.

b. that method's return.

c. the method body.

d. the arguments to the method..

answer:

6.2 Q2: Programs designed for maintainability are constructed from small simple pieces or modules. Modules in Java are called:

a. methods.

b. classes.

c. arguments.

d. both methods and classes.

Answer:

6.2 Q3: A well-designed method

a. performs multiple unrelated tasks.

b. repeats code found in other methods.

c. contains thousands of lines of code.

d. performs a single, well-defined task.

Answer:

Section 6.3 static Methods, static Fields and Class Math

6.3 Q1: To declare a method as static, place the keyword static before \_\_\_\_\_\_\_\_ in the method’s declaration.

a. the method modifier.

b. the return type.

c. the method name.

d. the argument list..

answer:

6.3 Q2: Which is a correct static method call of Math class method sqrt?

a. sqrt( 900 );.

b. math.sqrt( 900 );.

c. Math.sqrt( 900 );.

d. Math math = new Math(); math.sqrt( 900 );.

answer:

6.3 Q3: Which of the following methods is not in the Math class?

a. ceil.

b. abs.

c. parseInt.

d. log.

6.3 Q4: Which of the following can be an argument to a method?

a. Constants.

b. Variables.

c. Expressions.

d. All of the above.

Answer:

6.3 Q5: Method log takes the logarithm of its argument with respect to what base?

a. 10

b. e

c. 2

d. pi

answer:

Math Class Constants PI and E

6.3 Q6: Any field declared with keyword \_\_\_\_\_\_\_\_ is constant.

a. static.

b. const.

c. constant.

d. final.

Answer:

Why Is Method main Declared static?

6.3 Q7: Declaring main as \_\_\_\_\_\_\_\_ allows the JVM to invoke main without creating an instance of the class.

a. public.

b. void.

c. static.

d. final.

Answer:

Section 6.4 Declaring Methods with Multiple Parameters

6.4 Q1: Variables should be declared as fields only if

a. they are local variables.

b. they are used only within a method.

c. they are required for use in more than one method or their values must be saved between calls to the class’s methods.

d. they are arguments.

Answer:

6.4 Q2: Consider the following Java statements:

int x = 9;

double y = 5.3;

result = calculateValue( x, y );

Which of the following statements is false?

a. A method is called with its name and parentheses.

b. x and y are parameters.

c. Copies of x and y are passed to the method calculateValue.

d. x and y are arguments.

Answer:

6.4 Q3: The parameter list in the method header and the arguments in the method call must agree in:

a. number

b. type

c. order

d. all of the above

answer:

Assembling Strings with String Concatenation

6.4 Q4: Which operator can be used in string concatenation?

a. \*.

b. +=.

c. ++.

d. =+.

answer:

6.4 Q5: When an object is concatenated with a String:

a. a compilation error occurs.

b. a runtime error occurs.

c. the object’s toString method is implicitly called to obtain the String representation of the object.

d. the object’s class name is used.

Answer:

Section 6.5 Notes on Declaring and Using Methods

6.5 Q1: A static method can \_\_\_\_\_\_\_\_.

a. call only other static methods of the same class directly.

b. manipulate only static fields in the same class directly.

c. be called using the class name and a dot (.).

d. All of the above.

Answer:

6.5 Q2: Which statement is false?

a. If a method does not return a value, the return-value-type in the method declaration can be omitted.

b. Placing a semicolon after the right parenthesis enclosing the parameter list of a method declaration is a syntax error.

c. Redeclaring a method parameter as a local variable in the method’s body is a compilation error.

d. Forgetting to return a value from a method that should return a value is a compilation error.

Answer:

Section 6.6 Method Call Stack and Activation Records

6.6 Q1: Stacks are known as \_\_\_\_\_\_\_\_ data structures.

a. FIFO.

b. FILO.

c. LIFO.

d. LILO.

Answer:

6.6 Q2: If more method calls occur than can have their activation records stored on the program execution stack, an error known as a \_\_\_\_\_\_\_\_ occurs.

a. stack overflow.

b. stack rewind.

c. stack full.

d. stack empty.

Answer:

Section 6.7 Argument Promotion and Casting

6.7 Q1: Which of the following promotions of primitive types is not allowed to occur?

a. char to int.

b. int to double.

c. short to long.

d. double to float..

answer:

6.7 Q2: Which of the following primitive types is never promoted to another type?

a. double.

b. byte.

c. boolean.

d. Both a and c.

answer:

Section 6.8 Java API Packages

6.8 Q1: Which statement is not true.

a. The Java API consists of packages.

b. The Java API helps programmers avoid "reinventing the wheel."

c. The Java API consists of import declarations.

d. The class javax.swing.JApplet is part of the Java API.

Answer:

6.8 Q2: Which of the following is not a package in the Java API?

a. java.component.

b. java.awt.

c. javax.swing.event.

d. java.lang.

Answer:

6.8 Q3: The java.text package contains classes for manipulating all of the following items except

a. classes

b. numbers

c. strings

d. characters

answer:

Section 6.9 Case Study: Random-Number Generation

6.9 Q1: Math static method random generates a random double value in the range from 0.0

a. up to but not including 1.0

b. up to and including 1.0

c. up to and including 100.0

d. up to but not including 100.0

answer:

6.9 Q2: Which statement below could be used to simulate the outputs of tossing a quarter to get heads or tails? Suppose randomNumbers is a Random object.

a. randomNumbers.nextInt( 7 );

b. randomNumbers.nextInt( 2 );

c. randomNumbers.nextInt( 1 );

d. randomNumbers.nextInt( 25 );

answer:

Rolling a Six-Sided Die

6.9 Q3: Which statement below could be used to simulate the outputs of rolling a six-sided die? Suppose randomNumbers is a Random object.

a. 1 + randomNumbers.nextInt( 6 );

b. 1 + randomNumbers.nextInt( 2 );

c. 6 + randomNumbers.nextInt( 1 );

d. 3 + randomNumbers.nextInt( 3 );

answer:

Section 6.9.1 Generalized Scaling and Shifting of Random Numbers

6.9.1 Q1: Which statement creates a random value from the sequence 2, 5, 8, 11 and 14. Suppose randomNumbers is a Random object.

a. 2 + 5 \* randomNumbers.nextInt( 3 );

b. 3 + 2 \* randomNumbers.nextInt( 5 );

c. 5 + 3 \* randomNumbers.nextInt( 2 );

d. 2 + 3 \* randomNumbers.nextInt( 5 );

answer:

Section 6.9.2 Random-Number Repeatability for Testing and Debugging

6.9.2 Q1: You can set a Random object’s seed at any time during program execution by calling the object’s \_\_\_\_\_\_\_\_ methods.

a. changeSeed.

b. setSeed.

c. resetSeed.

d. updateSeed.

Answer:

Section 6.10 Case Study: A Game of Chance (Introducing Enumerations)

6.10 Q1: An enumeration is a special class that's introduced by the keyword \_\_\_\_\_\_\_\_ and a type name.

a. class.

b. enum.

c. enumeration.

d. classEnum.

Answer:

6.10 Q2: The identifiers in an enumeration \_\_\_\_\_\_\_\_.

a. must be unique.

b. may be duplicated.

c. must be lowercase letters and cannot contain numbers.

d. must be uppercase letters and cannot contain numbers.

Answer:

Section 6.11 Scope of Declarations

6.11 Q1: Identifiers in Java have \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_ scopes?

a. method, class.

b. class, block.

c. block, statement.

d. statement, file.

Answer:

6.11 Q2: Which of the following statements describes block scope?

a. It begins at the opening { of the class declaration and terminates at the closing }

b. It limits label scope to only the method in which it is declared.

c. It begins at the identifier's declaration and ends at the terminating right brace (}).

d. It is valid for one statement only.

Answer:

6.11 Q3: Which of these statements best defines scope?

a. Scope refers to the classes that have access to a variable.

b. Scope determines whether a variable’s value can be altered.

c. Scoping allows the programmer to use a class without using its fully qualified name.

d. Scope is the portion of a program that can refer to an entity by its simple name.

Answer:

6.12 Q1: Overloaded methods always have the same \_\_\_\_\_\_\_\_\_.

a. method name.

b. return type.

c. number of parameters.

d. order of the parameters.

Answer:

6.12 Q2: An overloaded method is one that

a. has a different name than another method, but the same parameters.

b. has the same name as another method, but different parameters (by number, types or order of the types).

c. has the same name and parameters as a method defined in another class.

d. has the same name and parameters, but a different return type as another method..

answer:

Declaring Overloaded Methods

6.12 Q3: Which of the following methods are overloaded with respect to one another?

public int max ( int a, int b ) { … }

public double max ( double a, double b ) { … }

public int max ( int a, int b, int c ) { … }

public double max ( double a, double b, double c ) { … }

a. A and B are overloaded; C and D are overloaded.

b. A and C are overloaded; B and D are overloaded.

c. A, B and C are overloaded.

d. All these four methods are overloaded.

Answer:

Distinguishing Between Overloaded Methods

6.12 Q4: Suppose method1 is declared as

void method1 ( int a, float b )

Which of the following methods correctly overloads method1?

a. void method2 ( int a, float b ).

b. void method2 ( float a, int b ).

c. void method1 ( float a, int b ).

d. void method1 ( int b, float a ).

answer:

6.12 Q5: A Java class can have which of the following methods?

A. void foo( int a )

B. void foo( int a, int b )

C. void foo( double a )

D. void foo( double a, double b )

E. void foo( int b )

a. All of the above.

b. A, B, D, E.

c. A, B, C, D.

d. A, C, D, E.

answer:

Return Types of Overloaded Methods

6.12 Q6: Method calls cannot be distinguished by \_\_\_\_\_\_\_\_.

a. method name.

b. return type.

c. parameter lists.

d. method signature.

Answer:

6.12 Q7: In a class containing methods with the same name, the methods are distinguished by:

a. Number of arguments.

b. Types of arguments.

c. Return type.

d. (a) and (b).

e. (b) and (c).

answer:

Section 6.13 (Optional) GUI and Graphics Case Study: Colors and Filled Shapes

6.13 Q1: Java uses class \_\_\_\_\_\_\_\_ to represent colors using their RGB values.

a. Color.

b. Colors.

c. RGBColor.

d. RGBColors.

Answer:

6.13 Q2: Filled rectangles and filled circles are drawn using Graphics method \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_.

a. fillRect, fillCircle.

b. filledRect, filledCircle.

c. fillRect, fillOval,

d. filledRect, filledOval.

Answer: