Chapter 2 Introduction to Java Applications

Section 2.2 Your First Program in Java: Printing a Line of Text

2.2 Q1: End-of-line comments that should be ignored by the compiler are denoted using
a. Two forward slashes (`//`).
b. Three forward slashes (`///`).
c. A slash and a star (`/*`).
d. A slash and two stars (`/**`).
ANS: a. Two forward slashes (`//`).

2.2 Q2: Which of the following is *not* a valid Java identifier?
a. `my Value`
b. `$_AAA1`
c. `width`
d. `m_x`
ANS: a. `my Value` (Identifiers may not contain blanks).

2.2 Q3: Which of the following cannot cause a syntax error to be reported by the Java compiler?
a. Mismatched `{}`
b. Missing `*/` in a comment that begins with `/*`
c. Missing `;`
d. An extra blank line.
ANS: d. An extra blank line.

2.2 Q4: Which of the following does not contain a syntax error?
a.
```
System.out.println( 'Hello world!' ):
```
b.
```
System.out.println( "Hello
            world!" );
```
c.
```
System.out.println( "Hello world!" );
```
d.
```
System.out.println( Hello world! );
```
ANS: c.
```
System.out.println( "Hello world!" );
```

Compiling and Executing Your First Java Application

2.2 Q5: Which command compiles the Java source code file `Welcome.java`?
a. `cd Welcome.java`
b. `javac Welcome.java`
c. `java Welcome.java`
d. `compile Welcome.java`
ANS: b. `javac Welcome.java`

2.2 Q6: Which command executes the Java class file `Welcome.class`?
a. `java welcome`
b. `java Welcome.class`
c. `java Welcome`
d. `run Welcome.class`
ANS: c. `java Welcome` (Note that you must use the same capitalization as the class name.)

Section 2.3 Modifying Your First Java Program

Displaying a Single Line of Text with Multiple Statements

2.3 Q1: Which is the output of the following statements?

```
System.out.print( "Hello ");
System.out.println( "World" );
```

a. `Hello World`
b. `HelloWorld`
c. `Hello`
   `World`
d. `World`
   `Hello`

ANS: a. `Hello World`

Displaying Multiple Lines of Text with a Single Statement

2.3 Q2: Which of the following is the *escape character*?

a. `*`
b. `\`
c. `\n`
d. `"`

**ANS: b. **

2.3 Q3: Which of the following statements will print a single line containing `"hello there"`?

a.
```
System.out.println( "hello" );
System.out.println( " there" );
```
b.
```
System.out.println( "hello" ,  " there" );
```
c.
```
System.out.println( "hello" );
System.out.print( " there" );
```
d.
```
System.out.print( "hello" );
System.out.println( " there" );
```

ANS: d.
```
System.out.print( "hello" );
System.out.println( " there" );
```

2.3 Q4: Which of the following escape sequences represents a carriage return?

a. `\n`.
b. `\r`.
c. `\cr`.
d. `\c`.

ANS: b. \r.

2.3 Q5: Which of the following statements would display the phase `Java is fun`?

a.
```
System.out.println( "hellois fun\rJava " );
```
b.
```
System.out.println( 'Java is fun' );
```
c.
```
System.out.println( "\"Java is fun\"" );
```
d.
```
System.out.println( Java is fun );
```

ANS: a.
```
System.out.println( "hellois fun\rJava " );
```

Section 2.4 Displaying Text with `printf`

2.4 Q1: When method `printf` requires multiple arguments, the arguments are separated with _____.

a. colons (`:`).
b. semicolons (`;`).
c. commas (`,`).
d. periods (`.`).

ANS: c. commas (,).

2.4 Q2: Which of the following statement displays `Hello World`?

a. `System.out.printf( "%2s", "Hello " "World" );`
b. `System.out.printf( "%s %s", "Hello", "World" );`
c. `System.out.printf( "%s%s", "Hello, World" );`
d. `System.out.printf( "s% s%", "Hello", "World" );`
ANS: b. `System.out.printf( "%s %s", "Hello", "World" );`

Section 2.5 Another Application: Adding Integers

2.5 Q1: Programs remember numbers and other data in the computer's memory and access that data through program elements called
a. comments.
b. messages.
c. integers.
d. variables.
ANS: d. variables.

Section 2.5.1 `import` Declarations

2.5.1 Q1: All `import` declarations *must* be placed
a. inside the class declaration's body.
b. before the class declaration.
c. after the class declaration.
d. all of the above will work.
ANS: b. before the class declaration.

2.5.1 Q2: Java's predefined classes are grouped into
a. packets.
b. declarations.
c. Galleries.
d. packages.
ANS: d. packages.

Section 2.5.2 Declaring Class `Addition`

2.5.2 Q1: The filename for the `public` class that begins with `public class Addition` must be
a. `public.java`.
b. `public.class.java`.
c. `Addition.java`.
d. `addition.java`.
ANS: c. `Addition.java`.

2.5.2 Q2 The body of each class declaration begins with _____ and ends with _____.
e. (,).
f. [,].
g. {, }.
h. /, \.
ANS: g. {, }.

Section 2.5.3 Declaring and Creating a `Scanner` to Obtain User Input from the Keyboard

2.5.3 Q1: Which of the following is a variable declaration statement?
a. `int total;`
b. `import java.util.Scanner;`
c. `public static void main( String args[] )`
d. `// first string entered by user`
ANS: a. `int total;`

2.5.3 Q2: A(n) _____ enables a program to read data from the user.
a. `printf`.
b. `import` declaration.
c. `Scanner`.
d. `main`.
ANS: c. `Scanner`.

Section 2.5.4 Declaring Variables to Store Integers

2.5.4 Q1: Which of the following is *not* a Java primitive type?
a. `char`
b. `byte`
c. `real`
d. `double`
ANS: c. `real`

2.5.4 Q2: Which of the following statements is *false*?
a. Primitive types are keywords.
b. Primitive types must appear in all lowercase letters.
c. Real numbers contain decimal points.
d. Variable name identifiers must begin with a lowercase letter.
ANS: d. Variable name identifiers must begin with a lowercase letter. This is not required, but it is a convention.

Section 2.5.5 Prompting the User for Input

2.5.5 Q1: Which of the following statements is *true*?
a. `System.out.print("Enter your age: ");` prompts the user to take action.
b. Class names typically begin with a capital letter.
c. Package `java.lang` is imported in every Java program.
d. All of the above are true.
ANS: d. All of the above are true.

Section 2.5.6 Obtaining an `int` as Input from the User

2.5.6 Q1: Which of the following is a `Scanner` method for inputting an integer value?
a. `nextInteger`
b. `integer`
c. `nextInt`
d. `int`
ANS: c. `nextInt`.

2.5.6 Q2: Given the Java statement

```
number1 = input.nextInt();
```

in which `number1` is an `int` and `input` is a `Scanner`, which of the following occurs if the user does not enter a valid `int` value?
a. A compilation error occurs.
b. The program continues executing and assigns the value `0` to `number1`.
c. A runtime logic error occurs.
d. None of the above.
ANS: c. A runtime logic error occurs.

Section 2.5.7 Prompting for and Inputting a Second `int`

(no questions; uses the same concepts as Sections 2.5.5 and 2.5.6)

Section 2.5.8 Using Variables in a Calculation

2.5.8 Q1: Portions of statements that contain calculations are called
a. variables.
b. constants.
c. expressions.
d. None of the above.
ANS: c. expressions.

2.5.8 Q2: Given the Java statement

```
sum = number1 + number2;
```

which of the following statements is *false*?
a. It's an assignment statement.
b. It calculates the sum of variables `number1` and `number2`.
c. The operands of the addition operator are `number1` and `number2`.
d. It assigns the value of `number1` to `sum`.
ANS: d. It assigns the value of `number1` to `sum`. Actually, it assigns the total of `number1` and `number2` to `sum`.

Section 2.5.9 Displaying the Result of the Calculation

2.5.9 Q1: The format specifier _____ is a placeholder for an `int` value.
a. `%n`
b. `%d`
c. `%int`
d. `%s`
ANS: b. `%d`

2.5.9 Q2: Optional parentheses in expressions are said to be
a. redundant.
b. binary operators.
c. implied.
d. declared.
ANS: a. redundant.

Section 2.5.10 Java API Documentation

(none)

Section 2.6 Memory Concepts

2.6 Q1: Which of the following statements does *not* alter the value stored in a memory location?

a. `int a;`
b. `number = 12;`
c. `y = y + 2;`
d. `width = Integer.parseInt(input);`

ANS: a. `int a;`

Section 2.7 Arithmetic

2.7 Q1: What is the value of `result` after the following Java statements execute (assume all variables are of type `int`)?

```
a = 4;
b = 12;
c = 37;
d = 51;
result = d % a * c + a % b + a;
```

a. 119
b. 51
c. 127
d. 59

ANS: a. 119

2.7 Q2: Which of the following is *not* an arithmetic operator?

a. `+`
b. `-`
c. `.`
d. `%`

ANS: c. .

Section 2.8 Decision Making: Equality and Relational Operators

2.8 Q1: What will be output after the following Java statements have been executed (assume all variables are of type `int`)?

```
a = 4;
b = 12;
c = 37;
d = 51;

if ( a < b )
   System.out.println( "a < b" );

if ( a > b )
   System.out.println( "a > b" );
```

```
        if ( d <= c )
           System.out.println( "d <= c" );

        if ( c != d )
           System.out.println( "c != d" );
```

a.
```
a < b
c != d
```
b.
```
a < b
d <= c
c != d
```
c.
```
a > b
c != d
```
d.
```
a < b
c < d
a != b
```
ANS: a.
```
a < b
c != d
```

2.8 Q2: Which of the following is *not* a compilation error?

a. Neglecting to initialize a local variable in a method before it is used.
b. Placing a semicolon at the end of the first line of an `if` statement.
c. Omitting the left and right parenthesis for the condition of an `if` statement.
d. All are compilation errors.

ANS: b. Placing a semicolon at the end of the first line of an `if` statement.

2.8 Q3: Each of the following is a relational or equality operator except:

a. `<=`
b. `=!`
c. `==`
d. `>`

ANS: b. `=!`