Chapter 2

Exercise 2:1

1. Left curly brace, right curly brace
2. If statement
3. Two backward slash //
4. Space, tab and newline
5. Keywords
6. Main
7. System.out.print, System.out.println, System.out.printf

Exercise 2.2

1. False- The comments do not affect the program execution because they will be ignored by the compiler
2. True
3. False- number and NuMbEr are different variables because java is case sensitive
4. False- it can be used as both an integer and float
5. False- multiplication, division and modulus have higher precedence than addition and subtraction.

2.7 - Differences Between Java Applications and Java Applets:- Java Applications: Standalone programs that run directly on the JVM.- Java Applets: Run within web browsers or applet viewers.

2.9 - Memory Concepts in Java:- Variables are stored in memory.- Primitive types store values directly, reference types store memory addresses.- Garbage collection reclaims memory from unused objects.

2.10 - Arithmetic Operators and Precedence:

Operator Precedence:

1. Parentheses ()

2. Multiplication, Division, Modulus \* / %

3. Addition, Subtraction +

4. Assignment =

2.11 - Java Decision-Making Statements:- if, if-else, switch, while, for, and do-while are common control flow structures in Java.

2.12 - Java Loops:- 'for' loop: For a known number of iterations.- 'while' loop: Repeats as long as a condition is true.- 'do-while' loop: At least one execution guaranteed.

2.13 - Java Comments and Documentation:- Single-line comment: // comment- Multi-line comment: /\* comment \*/- Javadoc comment: /\*\* documentation \*/

Section 5: Code Output Predictions (2.19 - 2.23)

2.19 - Understanding System.out.printf:

Example:

System.out.printf("This is a number: %d and a float: %.2f", 5, 3.456);

Output: This is a number: 5 and a float: 3.46

2.20 - Integer Division and Modulus:

Example:

System.out.println(10 / 3);

System.out.println(10 % 3);

Output:

3

1

2.21 - Operator Precedence:

Example:

System.out.println(5 + 2 \* 3 - 4 / 2);

Output:

9

2.22 - Increment and Decrement:

Example:

int x = 5;

System.out.println(++x); // Pre-increment

System.out.println(x--); // Post-decrement

System.out.println(x);

Output:

6

6

5

2.23 - Floating Point Arithmetic:

Example:

double a = 7 / 2;

System.out.println(a);

double b = 7.0 / 2;

System.out.println(b);

Output:

3.0

3.5