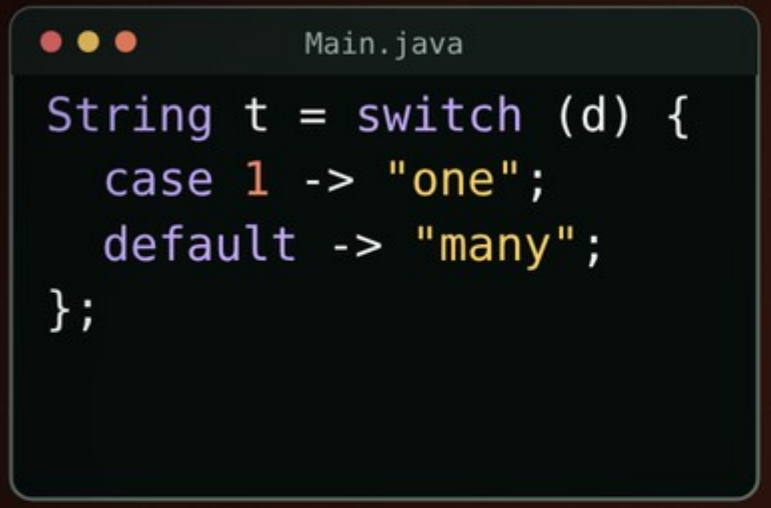
LESSON 3



Java

if · switch · loops

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JAVA PROGRAMMING

LESSON 3

Operators and Control Flow

Operators, if/else, switch expressions, while and for loops

Operators

Ops.java

```java
int a = 17, b = 5;
a / b;          // 3
a % b;          // 2
a > b && b > 0; // true
boolean even = a % 2 == 0;     // false
int max = a > b ? a : b;       // ternary: 17
```

- Arithmetic uses plus, minus, star, slash and percent for remainder. Integer division drops …
- Comparison operators return booleans, and double ampersand, double pipe and exclamation …

01

if, else if, else

Grade.java

```
if (score >= 90) {
    grade = "A";
} else if (score >= 75) {
    grade = "B";
} else {
    grade = "C";
}
```

- if runs a block when its condition is true. Chain else if for more cases and else for …
- Always use braces, even for one line. It prevents a classic bug when someone adds a second …

02

Switch Expressions

Days.java

```
String type = switch (day) {
    case "Friday" -> "weekend";
    case "Saturday", "Sunday" -> "work day";
    default -> {
        log("other day");
        yield "work day";
    }
};
```

- Modern Java's switch uses arrows. There is no fall-through and no break, and the whole ...
- Combine several labels with commas. Use yield when a case needs a block of code.

03

while and for Loops

Loops.java

```java
for (int i = 1; i <= 5; i++) {
    if (i == 3) continue;
    System.out.print(i + " ");      // 1 2 4 5
}
int n = 1;
while (n < 100) {
    n *= 2;                          // 128
}
```

- while repeats while a condition holds. do while runs the body at least once. The classic …
- break leaves a loop early, and continue skips to the next round.

04

Reading Input

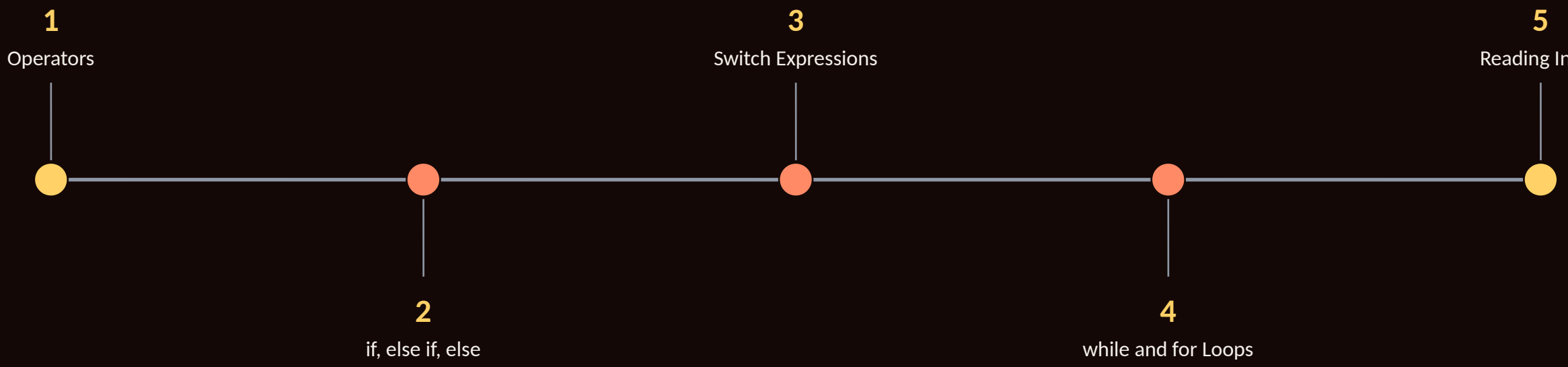
Average.java

```
Scanner in = new Scanner(System.in);
int sum = 0, count = 0;
while (true) {
    System.out.print("Score (0 to stop): ");
    int s = in.nextInt();
    if (s == 0) break;
    sum += s; count++;
}
System.out.printf("Average: %.1f%n", (double) sum / count);
```

- Scanner reads from the keyboard. nextLine reads a line of text, and nextInt reads a number.
- Here is a small program that asks for scores until the user types zero, then prints the …

05

Lesson Map


1
Operators
2
if, else if, else
3
Switch Expressions
4
while and for Loops
5
Reading Input

Sources and Further Reading

Ops.java

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JAVA PROGRAMMING · 3

Days.java

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Thank you for watching

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