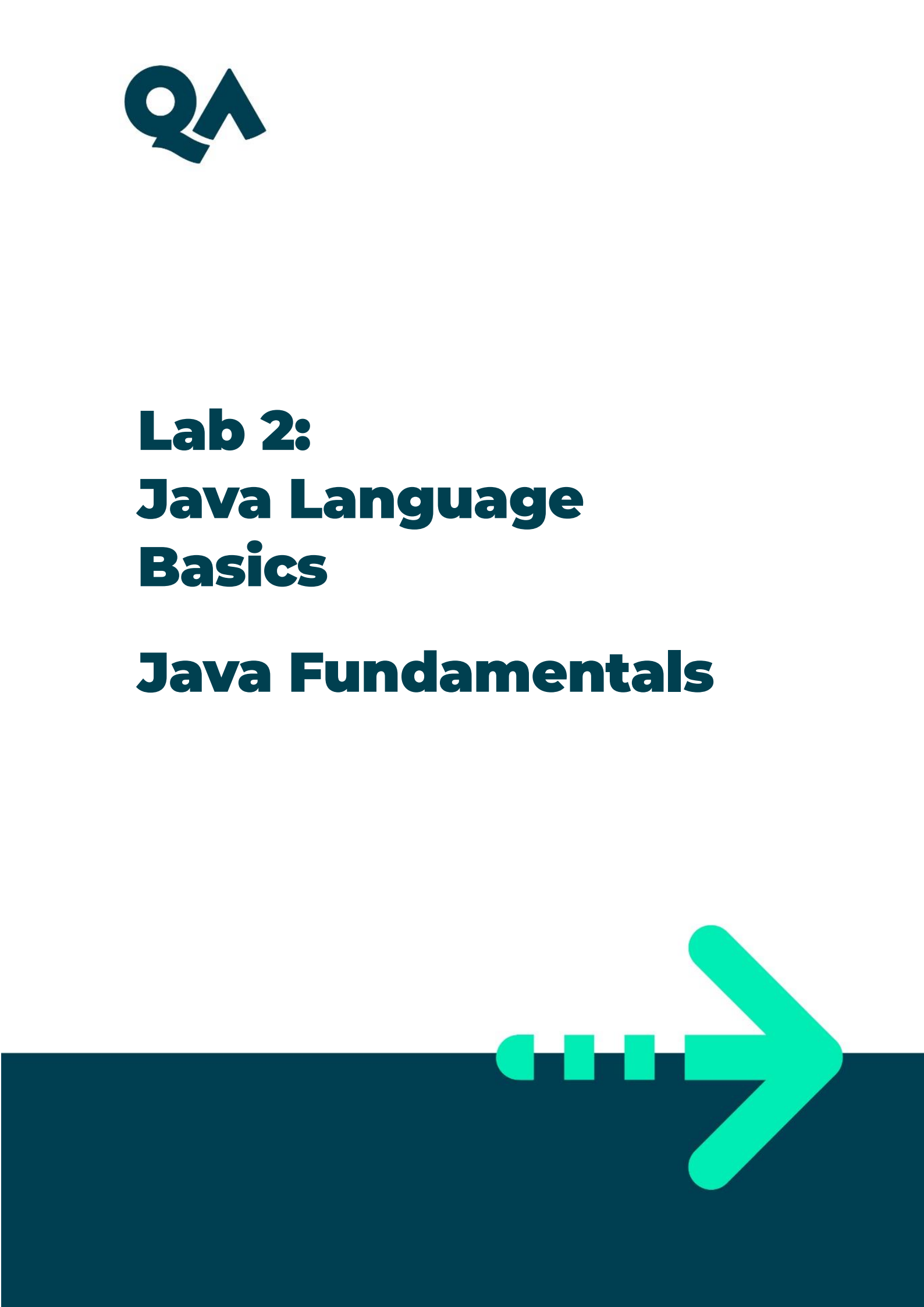

Lab 2: Java Language Basics

Java Fundamentals

Lab 2: Java Language Basics

Objective

In this lab you will:

- declare and initialise variables.
- practise using mathematical operators.

Part 1 – Declaring and initialising local variables

Step by step

1. Back in the labs project you created in Lab 1, create a new package called **lab02**.
2. Add a new class called **Program** to the *lab02* package with a main() method.

   Please refer to Lab 1's instructions if you need help.
3. Declare and initialise variables to hold your details. (These can be made up if you prefer.)
   a. age (int).
   b. name (String).
   c. house number (int), street (String) and postcode (String)
   d. telephone number (String)
   e. company you work for (String)
   f. salary (double)
   g. if you have a driving licence (boolean)
4. Use a println (or a series of println methods) to display the above information.

   You can put variable together inside a println() method using the + operator.

Part 2 – Doing some maths work

1. Expand the main method.
2. Comment all the code you wrote in Part 1.
   Tip: Highlight the code and press **Ctrl-/**
3. Copy and paste the code below and carry out the tasks.
   Please complete one task at a time, and save and run your code to test it at every step.

```
System.out.println("Initial Value: " + number);
int number = 5;

// Task 1
// - double it using the '*' operator
// - now double it again using the '*=' operator

System.out.println("\n1. After doubling it twice: " + number);

// Task 2
// - add 3 to it using the '+' operator
// - now add 3 to it using the '+=' operator

System.out.println("\n2. After adding 3 twice: " + number);

// Task 3 - subtract 12 from it using an appropriate 'compound' operator

System.out.println("\n3. After subtracting 12: " + number);

// Task 4 - divide the number (ought to be 14 now) by 3
// what do you think the answer is

System.out.println("\n4. After dividing by 3: " + number);

// Task 5 write 4 different statements that all do the same thing
// namely 'add 1 to the number'

System.out.println("\n5. After adding 1 four times: " + number);

// Task 6 decrement by 1 the value of number

System.out.println("\n6. After decrementing once: " + number);

// Task 7 put the remainder when dividing by 3 into 'remainder'

int remainder = 0;

System.out.println("\n7. Remainder when dividing by 3 is :" + remainder);

// Task 8
// decide what it will print before uncommenting the println()

int a = 2, b = 3, c = 5;
double d1, d2, d3, d4;


d1 = a + b * c / 2;
d2 = (a + b * c) / 2;
d3 = (a + b) * c / 2;
d4 = (a + b) * (c / 2);
```

```
// System.out.println("\n8. Values: " + d1 + " : " + d2 + " : " + d3
// + " : " + d4);

// Type your answer here-->

// Task 9

int p, q;
p = 10;
q = 10;
p += q++;

// Decide what the next line will print
// System.out.println("\n9. Result is: " + (p + q));
// Answer-->

// Task 10 – Uncomment the code below
//System.out.println("\n11.");

// Decide what the following 4 lines will print
// The 4th one might surprise you

// System.out.println("fred" + 3 + 4); // Answer-->
// System.out.println(3 + 4 + "fred"); // Answer-->
// System.out.println("" + 3 + 4); // Answer-->
// System.out.println(3 + ' ' + 4); // Answer-->
```

**** End ****