

```

1 package studyopedia;
2
3 public class DATATYPES {
4
5     public static void main(String[] args) {
6
7         // Call the runCell1 method
8         //primitive();
9         //nonprimitive();
10        //typeConversion();
11        Combining_data();
12    }
13
14    // Define the runCell1 method
15    public static void primitive() {
16
17
18        // ***** DATA TYPES *****
19
20        // ----- 1. PRIMITIVE DATA TYPES
21
22        System.out.println("Primitive Data Types: ");
23
24        // 1. byte:
25        byte b = 100;
26        System.out.println("byte value :" + b);
27
28        // 2. short
29        short s = 30000;
30        System.out.println("short value :" + s);
31
32        // 3. integer
33        int i = 100000;
34        System.out.println("integer value: " + i);
35
36        // 4. long
37        long l = 1232233555L; // Note: It's good to add 'L' at the end for long
literals
38        System.out.println("long value: " + l);
39
40        // 5. float
41        float a = 3.41243f; // 'f' is required to specify that it's a float
42        System.out.println("float value: " + a);
43
44        // 6. double
45        double d = 34.34334343;
46        System.out.println("double value: " + d);
47
48        // 7. char

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49     char c = 'A';
50     System.out.println("Char Value: " + c);
51
52     // 8. boolean
53     boolean isJavaFun = true;
54     System.out.println("boolean value: " + isJavaFun);
55 }
56
57
58 // ----- 2. Non-Primitive Data Types
59 public static void nonprimitive(){
60
61     System.out.println("Non-Primitive Data Types");
62
63     // 1. String : Represents a sequence of characters
64     String messages = "Hello, Java";
65     System.out.println("String message :" + messages);
66
67     // 2. Arrays : Holds multiple values of the same type
68     int[] numbers = {1, 2, 3, 4, 5};
69     System.out.println("Array first element :" + numbers[0]);
70
71     // 3. Classes : Blueprint for creating classes
72     // Creating the class
73     class Car {
74         String model = "Tesla";
75         int year = 2024;
76     }
77
78     // Initializing the class
79     Car myCar = new Car();
80
81     System.out.println("Car Model :" + myCar.model);
82     System.out.println("Model year of the car :" + myCar.year);
83 }
84
85 // ----- 3. Type Conversion
86
87 public static void typeConversion() {
88
89     System.out.println("Type Conversion : ");
90
91     // 1. Widening Conversion (Automatic): Converts smaller type to larger
92     type int num = 100;
93     double largenum = num; // int to double
94     System.out.println("Widened value: " + largenum);
95
96     // 2. Narrowing Conversion (Explicit): Converts larger type to smaller
97     type double decimal = 9.8;

```

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98     int integerPart = (int) decimal; // double to int
99     System.out.println("Narrowed value: " + integerPart);
100 }
101
102
103 // ----- 4. Combining Data types
104
105 public static void Combining_data() {
106
107     System.out.println("Combining Data Types: ");
108
109     int age=24;
110     float height = 5.9f;
111     String name="Aiden";
112     boolean isStudent=true;
113
114     System.out.println("Name: "+name);
115     System.out.println("Age: "+age);
116     System.out.println("Height: "+height+"feet");
117     System.out.println("Is a Student? "+ isStudent);
118 }
119
```