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Practice java coding

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Last update on March 13 2025 12:00:13 (UTC/GMT +8 hours) This resource offers a total of 5356 Java Programming problems for practice. It includes 1129 main exercises, each accompanied by solutions, detailed explanations, and 4 to 5 related problems. Java Exercises: Java is the backbone of networked, mobile, and enterprise applications, used by over 9 million developers worldwide. Practice exercises-from basic to advanced-with sample solutions to boost your coding skills. Challenge yourself, learn by doing, and enjoy coding! Note: If you are not habituated with Java programming you can learn from the following : Java Programming Language More to Come ! List of Exercises with Solutions : HTML CSS Exercises, Practice, Solution JavaScript Exercises, Practice, Solution JQuery Exercises, Practice, Solution jQuery-UI Exercises, Practice, Solution CoffeeScript Exercises, Practice, Solution Twitter Bootstrap Exercises, Practice, Solution C Programming Exercises, Practice, Solution C# Sharp Programming Exercises, Practice, Solution PHP Exercises, Practice, Solution Python Exercises, Practice, Solution R Programming Exercises, Practice, Solution Java Exercises, Practice, Solution SQL Exercises, Practice, Solution PostgreSQL Exercises, Practice, Solution MongoDB Exercises, Practice, Solution iWant to contribute to Java exercises? Send your code (attached with a zip file) to us at w3resource[at]yahoo[dot]com. Please avoid copyrighted materials. | Do not submit any solution of the above exercises at here, if you want to contribute go to the appropriate exercise page. Warmup-1 Simple warmup problems to get started (solutions available) Warmup-2 Medium warmup string/array loops (solutions available) String-1 Basic string problems -- no loops Array-1 Basic array problems -- no loops. Logic-1 Basic boolean logic puzzles -- if else && || 1 Logic-2 Medium boolean logic puzzles -- if else && || 1 String-2 Medium String problems -- 1 loop String-3 Harder String problems -- 2 loops Array-2 Medium array problems -- 1 loop Array-3 Harder array problems -- 2 loops, more complex logic AP-1 AP CS medium problems Recursion-1 Basic recursion problems Recursion-2 Harder recursion problems Map-1 Basic Map get()/put(), no loops Map-2 Maps with bulk data and loops Functional-1 Functional mapping operations on lists with lambdas Functional-2 Functional filtering and mapping operations on lists with lambdas Misc Code Practice Seems like cookies are disabled on this browser, please enable them to open this website Codus has a library of hundreds of hand-written problems designed to reinforce programming skills. Codus saves your solutions as soon as you write them, so you never lose any work, ever. Codus checks every solution against a thorough set of test cases. Codus displays both stdout and stderr after every problem run in order to allow robust debugging. class Greeter { String getGreeting() { return "Hello, World!"; } } Java is a modern, fast-evolving language with releases every 6 months. Every expression has a type known at compile time. Java is primarily an object-oriented language, but has many functional features introduced in v1.8. Java is used for a variety of workloads like web, cloud, mobile and game applications. Java was designed to be cross-platform with the slogan "Write once, run anywhere". Java programs perform automatic memory management for their lifecycles. See all the concepts for Java. The best part, it's 100% free for everyone. Share — copy and redistribute the material in any medium or format for any purpose, even commercially. Adapt — remix, transform, and build upon the material for any purpose, even commercially. The licensor cannot revoke these freedoms as long as you follow the license terms. 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This collection of Java basic coding practice problems covers essential topics such as input/output operations, arithmetic and logical operators, type conversion, conditional statements, loops, and more. These exercises are categorized into Basic, Easy, and Medium levels, allowing you to gradually strengthen your Java programming skills. Practicing these problems will help build a strong foundation in Java syntax, logic building, and problem-solving, making it easier to tackle advanced programming challenges and technical interviews. Java Basics Practice QuestionsBasic:Easy:Mastering Java fundamentals is essential for building strong problem-solving skills and progressing to data structures, algorithms, and object-oriented programming. Practicing these Java coding problems will improve your logic, syntax understanding, and programming confidence, preparing you for technical interviews. This is a free set of tasks for your Java practice by CodeGym. If you're a beginner, you can start learning the basics and get immediate feedback on your progress. If you're a seasoned learner, it will help you estimate your current level of knowledge with additional Java challenges. Try to solve the first tasks - you'll enjoy it! We've prepared a collection of Java exercises that will help you grasp the syntax of Java language and some core programming topics. In addition, you'll find useful links to articles that cover the theory of Java. Enjoy your Java practice online and enhance your theory knowledge here! In this free simulator, you'll find Java programming exercise with solutions verification. Just open the task, read the conditions, type your solution, and click "Verify". You'll get the result in a blink of an eye. There are different types of coding challenges in Java: writing your own code, correcting the existing one, and retyping, so your Java practice will be enjoyable and versatile. Tons of versatile Java coding tasks for learners with any background: from Java Syntax and Core Java topics to Multithreading and Java Collections The support from the CodeGym team and the global community of learners ("Help" section, programming forum, and chat) The modern tool for coding practice: with an automatic check of your solutions, hints on resolving the tasks, and advice on how to improve your coding style In Java programming, commands are essential instructions that tell the computer what to do. These commands are written in a specific way so the computer can understand and execute them. Every program in Java is a set of commands. At the beginning of your Java programming practice, it's good to know a few basic principles: In Java, each command ends with a semicolon; A command can't exist on its own: it's a part of a method, and method is part of a class; Method (procedure, function) is a sequence of commands. Methods define the behavior of an object. Here is an example of the command: System.out.println("Hello, World!"); The command System.out.println("Hello, World!"); tells the computer to display the text inside the quotation marks. If you want to display a number and not text, then you do not need to put quotation marks. You can simply write the number. Or an arithmetic operation. For example: System.out.println(1); Command to display the number 1. System.out.println(5 + 5); A command in which two numbers are summed and their sum (10) is displayed. As we discussed in the basic rules, a command cannot exist on its own in Java. It must be within a method, and a method must be within a class. Here is the simplest program that prints the string "Hello, World!": public class HelloWorld { public static void main(String[] args) { //here we print the text out System.out.println("Hello, World!"); } } We have a class called HelloWorld, a method called main(), and the command System.out.println("Hello, World!"). You may not understand everything in the code yet, but that's okay! You'll learn more about it later. The good news is that you can already write your first program with the knowledge you've gained. Attention! You can add comments in your code. Comments in Java are lines of code that are ignored by the compiler, but you can mark with them your code to make it clear for you and other programmers. Single-line comments start with two forward slashes (//) and end at the end of the line. In example above we have a comment //here we print the text out You can read the theory on this topic here, here, and here. But try practicing first! Explore the Java coding exercises for practicing with commands below. First, read the conditions, scroll down to the Solution box, and type your solution. Then, click Verify (above the Conditions box) to check the correctness of your program. Exercise 1 Exercise 2 Exercise 3 Start task Types and keyboard input in Java The two main types in Java are String and int. We store strings/text in String, and integers (whole numbers) in int. We have already used strings and integers in previous examples without explicit declaration, by specifying them directly in the System.out.println() operator. System.out.println("I am a String"); System.out.println(5); In the first case "I am a string" is a String in the second case 5 is an integer of type int. However, most often, in order to manipulate data, variables must be declared before being used in the program. To do this, you need to specify the type of the variable and its name. You can also set a variable to a specific value, or you can do this later. Example: int a; int b = 5; String s = "Hello, World!"; Here we declared a variable called a but didn't give it any value, declared a variable b and gave it the value 5, declared a string called s and gave it the value Hello, World! Attention! In Java, the = sign is not an equals sign, but an assignment operator. That is, the variable (you can imagine it as an empty box) is assigned the value that is on the right (you can imagine that this value was put in the empty box). int a; a = 5; We created an integer variable named a with the first command and assigned it the value 5 with the second command. Before moving on to practice, let's look at an example program where we will declare variables and assign values to them: public class HelloWorld { public static void main(String[] args) { int a; int b = 5; String s = "Hello, World!"; a = 2; System.out.println(a); System.out.println(a + b); System.out.println(s); } } In the program, we first declared an int variable named a but did not immediately assign it a value. Then we declared an int variable named b and "put" the value 5 in it. Then we declared a string named s and assigned it the value "Hello, World!". After that, we assigned the value 2 to the variable a that we declared earlier, and then we printed the variable a, the sum of the variables a and b, and the variable s to the screen This program will display the following: 2 Hello, World! We already know how to print to the console, but how do we read from it? For this, we use the Scanner class. To use Scanner, we first need to create an instance of the class. We can do this with the following code: Scanner scanner = new Scanner(System.in); Once we have created an instance of Scanner, we can use the next() method to read input from the console or nextInt() if we should read an integer. The following code reads a number from the console and prints it to the console: import java.util.Scanner; public class Main { public static void main(String[] args) { System.out.println("Enter a number "); Scanner scanner = new Scanner(System.in); int number = scanner.nextInt(); System.out.println(number); } } Here we first import a library scanner, then ask a user to enter a number. Later we created a scanner to read the user's input and print the input out. This code will print the following output in case of user's input is 5: Enter a number 5 More information about the topic you could read here, here, and here. See the exercises on Types and keyboard input to practice Java coding: Exercise 1 Exercise 2 Exercise 3 Start task Conditions and If statements in Java Conditions and If statements in Java allow your program to make decisions. For example, you can use them to check if a user has entered a valid password, or to determine whether a number is even or odd. For this purpose, there's an 'if/else statement' in Java. The syntax for an if statement is as follows: if (condition) { // code to be executed if the condition is true } ... if (conditionN) { // code to be executed if the condition is true } else { // code to be executed if the conditions is false } Here could be one or more conditions in if and zero or one condition in else. Here's a simple example: int age = 18; if (age >= 18) { System.out.println("You are an adult."); } else { System.out.println("You are a minor."); } In this example, we check if the variable "age" is greater than or equal to 18. If it is, we print "You are an adult." If not, we print "You are a minor." More information about the topic you could read here, here, and here. Here are some Java practice exercises to understand Conditions and If statements: Exercise 1 Exercise 2 Exercise 3 Start task In Java, a "boolean" is a data type that can have one of two values: true or false. Here's a simple example: boolean isJavaFun = true; boolean isCodingEasy = false; System.out.println("Is Java fun? " + isJavaFun); System.out.println("Is coding easy? " + isCodingEasy); The output of this program is here: Is Java fun? true Is coding easy? false In addition to representing true or false values, booleans in Java can be combined using logical operators. Here, we introduce the logical AND (&&) and logical OR (||) operators. boolean isJavaFun = true; boolean isCodingEasy = false; // Using logical operators boolean isBothFunAndEasy = isJavaFun && isCodingEasy; boolean isEitherFunOrEasy = isJavaFun || isCodingEasy; System.out.println("Is it both fun and easy? " + isBothFunAndEasy); System.out.println("Is it either fun or easy? " + isEitherFunOrEasy); && (AND) returns true if both operands are true. In our example, isBothFunAndEasy is true because Java is fun (isJavaFun is true) and coding is not easy (isCodingEasy is false). || (OR) returns true if at least one operand is true. In our example, isEitherFunOrEasy is true because Java is fun (isJavaFun is true), even though coding is not easy (isCodingEasy is false). The NOT operator (!) is unary, meaning it operates on a single boolean value. It negates the value, so !isCodingEasy is true because it reverses the false value of isCodingEasy. So the output of this program is: Is it both fun and easy? true Is it either fun or easy? true More information about the topic you could read here, and here. Here are some Java exercises to practice booleans: Start task With loops, you can execute any command or a block of commands multiple times. The construction of the while loop is: while (condition) { // code to be executed repeatedly. Java provides two commonly used loops: while and for. 1. while Loop: The while loop continues executing a block of code as long as a specified condition is true. Firstly, the condition is checked. While it's true, the body of the loop (commands) is executed. If the condition is always true, the loop will repeat infinitely, and if the condition is false, the commands in a loop will never be executed. Example: int count = 1; while (count != 5) { // Step 2: Create an object of the Person class Person person1 = new Person(); // Set the name property person1.name = "Johnny"; // Step 1: Define the Person class class Person { String name; // Property // Method to say hello void sayHello() { System.out.println("Hello, my name is " + name); } } public class Main { public static void main(String[] args) { // Step 2: Create an object of the Person class Person person1 = new Person(); // Set the name property person1.name = "Johnny"; // Call the sayHello method person1.sayHello(); // Output: "Hello, my name is Johnny" // Create another object Person person2 = new Person(); person2.name = "Ivy"; person2.sayHello(); // Output: "Hello, my name is Ivy" } } In this example, we defined a Person class with a name property and a sayHello method. We then created two Person objects (person1 and person2) and used them to represent individuals with different names. More information about the topic you could read here, here, and here. Here are some coding challenges in Java object creation: Exercise 1 Exercise 2 Exercise 3 Start task Static Classes and Methods in Java Static classes and methods in Java are used to create members that belong to the class itself, rather than to instances of the class. They can be accessed without creating an object of the class. Static methods and classes are useful when you want to define utility methods or encapsulate related classes within a larger class without requiring an instance of the outer class. They are often used in various Java libraries and frameworks for organizing and providing utility functions. You declare them with the static modifier. Static Methods A static method is a method that belongs to the class rather than any specific instance. You can call a static method using the class name, without creating an object of that class. public class Calculator { public static int add(int num1, int num2) { return num1 + num2; } } public class Main { public static void main(String[] args) { int result = Calculator.add(5, 3); System.out.println("Result: " + result); // Output: Result: 8 } } In this example, the add method is static. You can directly call it using Calculator.add(5, 3) Static Classes In Java, you can also have static nested classes, which are classes defined within another class and marked as static. These static nested classes can be accessed using the outer class's name. public class School { static class Student { String name; Student(String name) { this.name = name; } } } public class Main { public static void main(String[] args) { School.Student student1 = new School.Student("Johnny"); School.Student student2 = new School.Student("Ivy"); System.out.println("Student 1: " + student1.name); // Output: Student 1: Johnny System.out.println("Student 2: " + student2.name); // Output: Student 2: Ivy } } In this example, Student is a static nested class within the School class. You can access it using School.Student. More information about the topic you could read here, here, here, and here. See below the exercises on Static classes and methods in our Java coding practice for beginners: Exercise 1 Exercise 2 Exercise 3 Start task