Revision

Encapsulation

Encapsulation is the bundling of data (attributes) and methods (functions) that operate on the data into a single unit or class. It restricts direct access to some of the object's components, which is a way of preventing accidental interference and misuse of the data.

Inheritance

Inheritance allows a class (child class) to inherit attributes and methods from another class (parent class). It helps in code reusability and creating a relationship between classes.

Constructor

A constructor is a special method that is automatically called when an object of a class is created. It's typically used to initialize the object's attributes.

Polymorphism

Polymorphism refers to the ability of different classes to be treated as instances of the same class through inheritance. It also refers to the ability to use a single method name to perform different tasks based on the object it is acting upon**.**

Revision question

1. What is Java?

Java is a high-level, class-based, object-oriented programming language designed to have as few implementation dependencies as possible.

It is widely used for building large-scale enterprise applications, mobile applications (especially Android apps), web-based applications, and more.

2. Why do we use NetBeans?

NetBeans is an Integrated Development Environment (IDE) used for developing Java applications.

It provides a user-friendly interface, tools for code editing, debugging, compiling, and version control, among other features.

3. How does java run on your pc?

Java code is first compiled into bytecode by the Java compiler.

This bytecode is platform-independent and can run on any system with a JVM (Java Virtual Machine).

4. Is java relevant in today's industry?

It is widely used in various domains, including enterprise software development,

Android mobile development, web applications, cloud-based services, and even big data technologies like Hadoop. Java's robustness, security features, scalability, and vast ecosystem make it a go-to language for many developers and organizations.

5. Where is java most widely used?

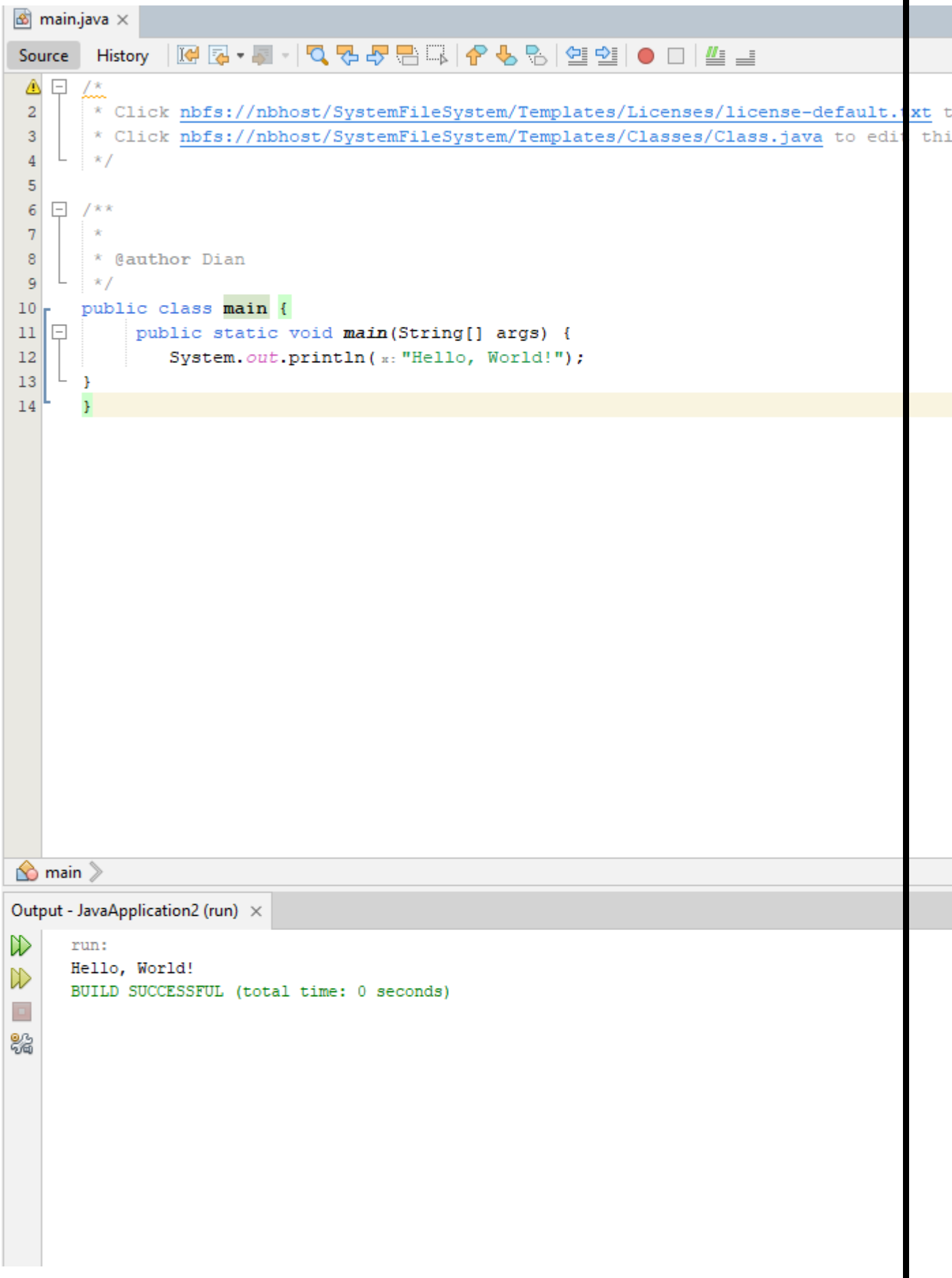
- **Enterprise applications:** Java is a standard for building large-scale, reliable, and secure business applications.
- **Android development:** Java is the primary language for Android app development.
- **Web applications:** Java is used in web servers and backend development.
- **Big Data technologies:** Java is used in big data processing frameworks like Apache Hadoop.
- **Financial services:** Java is often used for developing trading systems, banking applications, and more.

6. What is a root/project folder?

A root/project folder is the top-level directory in a project's file structure where all the project files and subdirectories are stored. This folder contains source code files, configuration files, libraries, and other resources needed for the project.

7. Provide a screenshot of you creating a 'Hello, World!' application

```
run:
Hello, World!
BUILD SUCCESSFUL (total time: 0 seconds)
```


main.java
Source
History
/*
* Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt t
* Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit thi
*/
/**
*
* @author Dian
*/
public class main {
public static void main(String[] args) {
System.out.println(x: "Hello, World!");
}
}
main
Output - JavaApplication2 (run)
run:
Hello, World!
BUILD SUCCESSFUL (total time: 0 seconds)

1. Explain what are variables used for?

Variables are used to store data that can be referenced and manipulated in a program. They act as containers for values that your program can use, such as numbers, text, or more complex data types. Variables are essential for storing inputs, outputs, intermediate results, and any other data that your program needs to process.

2. Which datatypes are used more commonly in each application?

3. **int**: For integer numbers (e.g., int age = 25;).
4. **double/float**: For floating-point numbers (e.g., double price = 19.99;).
5. **char**: For single characters (e.g., char letter = 'A';).
6. **String**: For sequences of characters (e.g., String name = "Alice";).
7. **boolean**: For true/false values (e.g., boolean isActive = true;).
8. **Array/List:** For collections of items (e.g., int[] numbers = {1, 2, 3};).

9. Why do we import a print method?

In Java, the System.out.println() method is used to print text to the console. It is part of the java.lang package, which is automatically imported. In other languages, you may need to import specific libraries or modules to use print methods or functions.

10. What is the difference between a method and function?

Method: In object-oriented programming, a method is a function that is associated with an object or class. It operates on the data contained within that object.

Function: A function is a block of code that performs a specific task. It can exist independently (in some programming languages) or be associated with an object (as a method). In Java, all functions are methods because they must be associated with a class or object.

11. Where are classes used and where will objects be used?

Classes are used to define the blueprint for creating objects. They encapsulate data for the object and define its behavior through methods. You define a class when you want to create a new type of object with specific properties and behaviors.

Objects are instances of classes. They are used when you need to create and manipulate data according to the blueprint provided by a class. An object represents a specific entity in your application, with its own state and behavior based on its class.