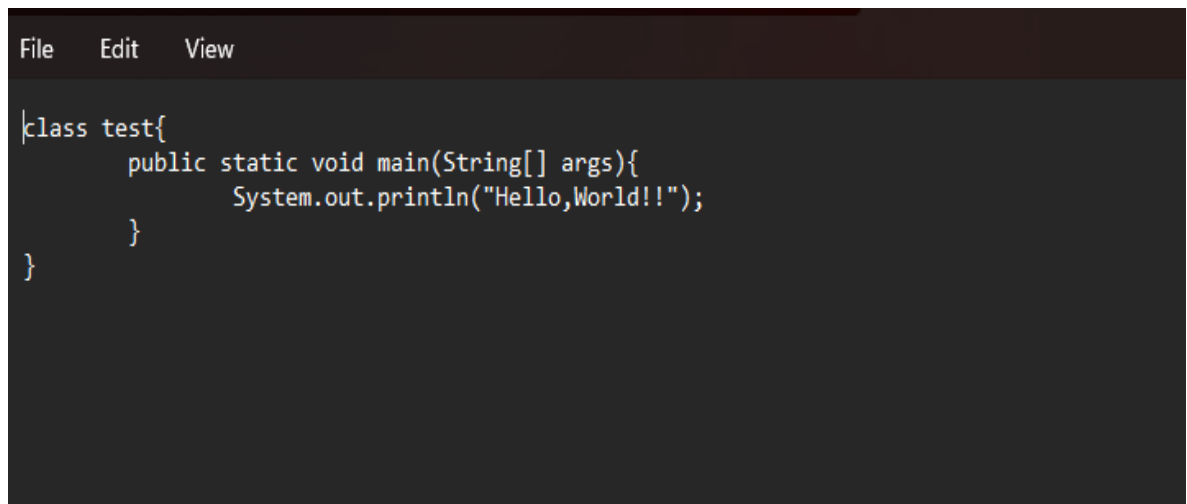
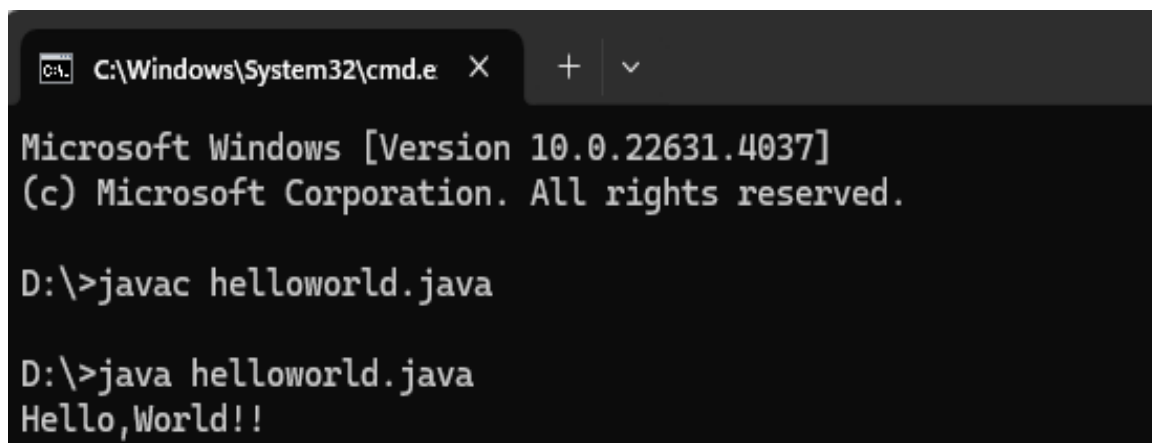


1. Hello World Program: Write a Java program that prints “Hello World!!” to the console.

A screenshot of a code editor with a dark theme. The editor has a menu bar at the top with 'File', 'Edit', and 'View'. The code is written in a light-colored font on a dark background. It defines a class named 'test' with a single static method 'main' that takes a String array 'args' and prints 'Hello,World!!' to the console.

```
class test{  
    public static void main(String[] args){  
        System.out.println("Hello,World!!");  
    }  
}
```

A screenshot of a Windows command prompt window. The title bar shows 'C:\Windows\System32\cmd.e' and a close button. The window contains the following text: 'Microsoft Windows [Version 10.0.22631.4037]', '(c) Microsoft Corporation. All rights reserved.', 'D:\>javac helloworld.java', 'D:\>java helloworld.java', and 'Hello,World!!'.

```
Microsoft Windows [Version 10.0.22631.4037]  
(c) Microsoft Corporation. All rights reserved.  
  
D:\>javac helloworld.java  
  
D:\>java helloworld.java  
Hello,World!!
```

2. Compile with Verbose Option: Compile your Java file using the -verbose option with javac. Check the output.

```
D:\>javac -verbose helloworld.java
[parsing started SimpleFileObject[D:\helloworld.java]]
[parsing completed 10ms]
[loading /modules/java.base/module-info.class]
[loading /modules/jdk.charsets/module-info.class]
[loading /modules/jdk.sctp/module-info.class]
[loading /modules/jdk.management/module-info.class]
[loading /modules/jdk.editpad/module-info.class]
[loading /modules/jdk.net/module-info.class]
[loading /modules/java.datatransfer/module-info.class]
[loading /modules/jdk.jconsole/module-info.class]
[loading /modules/jdk.localedata/module-info.class]
[loading /modules/jdk.zipfs/module-info.class]
[loading /modules/java.desktop/module-info.class]
[loading /modules/jdk.crypto.mscapi/module-info.class]
[loading /modules/jdk.naming.dns/module-info.class]
[loading /modules/java.se/module-info.class]
[loading /modules/java.security.sasl/module-info.class]
[loading /modules/jdk.xml.dom/module-info.class]
[loading /modules/java.instrument/module-info.class]
[loading /modules/jdk.jdi/module-info.class]
[loading /modules/jdk.jcmd/module-info.class]
[loading /modules/jdk.security.jgss/module-info.class]
[loading /modules/jdk.jstatd/module-info.class]
[loading /modules/java.scripting/module-info.class]
[loading /modules/java.net.http/module-info.class]
[loading /modules/jdk.internal.vm.compiler/module-info.class]
[loading /modules/jdk.crypto.cryptoki/module-info.class]
[loading /modules/jdk.management.agent/module-info.class]
[loading /modules/jdk.internal.jvms/module-info.class]
[loading /modules/jdk.jsobject/module-info.class]
[loading /modules/java.xml/module-info.class]
[loading /modules/jdk.incubator.vector/module-info.class]
[loading /modules/jdk.attach/module-info.class]
[loading /modules/java.sql/module-info.class]
[loading /modules/jdk.internal.le/module-info.class]
[loading /modules/java.management/module-info.class]
[loading /modules/java.smartcardio/module-info.class]
[loading /modules/jdk.dynalink/module-info.class]
[loading /modules/jdk.random/module-info.class]
[loading /modules/jdk.jdwp.agent/module-info.class]
[loading /modules/jdk.jdeps/module-info.class]
[loading /modules/jdk.unsupported.desktop/module-info.class]
[loading /modules/jdk.security.auth/module-info.class]
[loading /modules/jdk.hotspot.agent/module-info.class]
[loading /modules/java.rmi/module-info.class]
[loading /modules/jdk.jpackage/module-info.class]
[loading /modules/jdk.internal.ed/module-info.class]
[loading /modules/jdk.compiler/module-info.class]
[loading /modules/jdk.javadoc/module-info.class]
[loading /modules/java.management.rmi/module-info.class]
[loading /modules/jdk.jlink/module-info.class]
[loading /modules/jdk.jartool/module-info.class]
[loading /modules/java.transaction.xa/module-info.class]
[loading /modules/java.security.jgss/module-info.class]
[loading /modules/jdk.unsupported/module-info.class]
[loading /modules/java.compiler/module-info.class]
[loading /modules/jdk.crypto.ec/module-info.class]
[loading /modules/jdk.jshell/module-info.class]
[loading /modules/java.naming/module-info.class]
[loading /modules/jdk.internal.opt/module-info.class]
[loading /modules/java.sql.rowset/module-info.class]
[loading /modules/jdk.management.jfr/module-info.class]
[loading /modules/java.logging/module-info.class]
[loading /modules/jdk.internal.vm.ci/module-info.class]
[loading /modules/jdk.naming.rmi/module-info.class]
[loading /modules/jdk.internal.vm.compiler.management/module-info.class]
[loading /modules/jdk.nio.mapmode/module-info.class]
```

```

[loading /modules/jdk.crypto.ec/module-info.class]
[loading /modules/jdk.jshell/module-info.class]
[loading /modules/java.naming/module-info.class]
[loading /modules/jdk.internal.opt/module-info.class]
[loading /modules/java.sql.rowset/module-info.class]
[loading /modules/jdk.management.jfr/module-info.class]
[loading /modules/java.logging/module-info.class]
[loading /modules/jdk.internal.vm.ci/module-info.class]
[loading /modules/jdk.naming.rmi/module-info.class]
[loading /modules/jdk.internal.vm.compiler.management/module-info.class]
[loading /modules/jdk.nio.mapmode/module-info.class]
[loading /modules/java.xml.crypto/module-info.class]
[loading /modules/jdk.httpserver/module-info.class]
[loading /modules/jdk.accessibility/module-info.class]
[loading /modules/java.prefs/module-info.class]
[loading /modules/jdk.jfr/module-info.class]
[search path for source files: .]
[search path for class files: C:\Program Files\Java\jdk-21\lib\modules, .]
[loading /modules/java.base/java/lang/Object.class]
[loading /modules/java.base/java/lang/String.class]
[loading /modules/java.base/java/lang/Deprecated.class]
[loading /modules/java.base/java/lang/annotation/Retention.class]
[loading /modules/java.base/java/lang/annotation/RetentionPolicy.class]
[loading /modules/java.base/java/lang/annotation/Target.class]
[loading /modules/java.base/java/lang/annotation/ElementType.class]
[checking test]
[loading /modules/java.base/java/io/Serializable.class]
[loading /modules/java.base/java/lang/AutoCloseable.class]
[loading /modules/java.base/java/lang/System.class]
[loading /modules/java.base/java/io/PrintStream.class]
[loading /modules/java.base/java/lang/Appendable.class]
[loading /modules/java.base/java/io/Closeable.class]
[loading /modules/java.base/java/io/FilterOutputStream.class]
[loading /modules/java.base/java/io/OutputStream.class]
[loading /modules/java.base/java/io/Flushable.class]
[loading /modules/java.base/java/lang/Comparable.class]
[loading /modules/java.base/java/lang/CharSequence.class]
[loading /modules/java.base/java/lang/constant/Constable.class]
[loading /modules/java.base/java/lang/constant/ConstantDesc.class]
[wrote test.class]
[total 154ms]

```

3. Inspect Bytecode: Use the javap tool to examine the bytecode of the compiled .class file. Observe the output.

```

D:\>javap test.class
Compiled from "helloworld.java"
class test {
    test();
    public static void main(java.lang.String[]);
}

```