INTRO TO PLUGIN DEVELOPMENT FOR MINECRAFT

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PLUGIN VS. MOD

PLUGIN	MOD
server-side	client-side
modifies the behavior of existing assets	modifies the behavior and may add new assets
does not require any action from the player	requires installation by the player

ENVIRONMENT

» JDK (17 recommended)

» PaperMC server (or Bukkit/Spiglot)

» + Worldedit plugin

» IDE (e.g. JetBrains IntelliJ IDEA)

» + IntelliJ IDEA Minecraft Development plugin

» Minecraft 1.18+ (1.19 recommended)

JDK

Linux, e.g. Ubuntu
```
$ sudo apt-get update
$ sudo apt-get install openjdk-17-jdk
```

macOS
```
$ brew tap adoptopenjdk/openjdk
$ brew cask install adoptopenjdk17
```

Windows
From excecutable, e.g. at https://www.oracle.com/java/technologies/javase/jdk17-archive-downloads.html

PAPERMC

» Combines Bukkit, Spigot and other nice things

» Faster and more stable than alternatives

» Includes a broader Minecraft API

All systems
JAR file from https://papermc.io/downloads

WORLDEDIT

WorldEdit lets you build *fast* and *smart*. Why should you spend your time building a wall or excavating a hole when you can work on something *creative*? Get started with the essential building tool used by almost all professional Minecraft builders today!

All systems
https://enginehub.org/worldedit/

IDE

» Free*

» Powerful
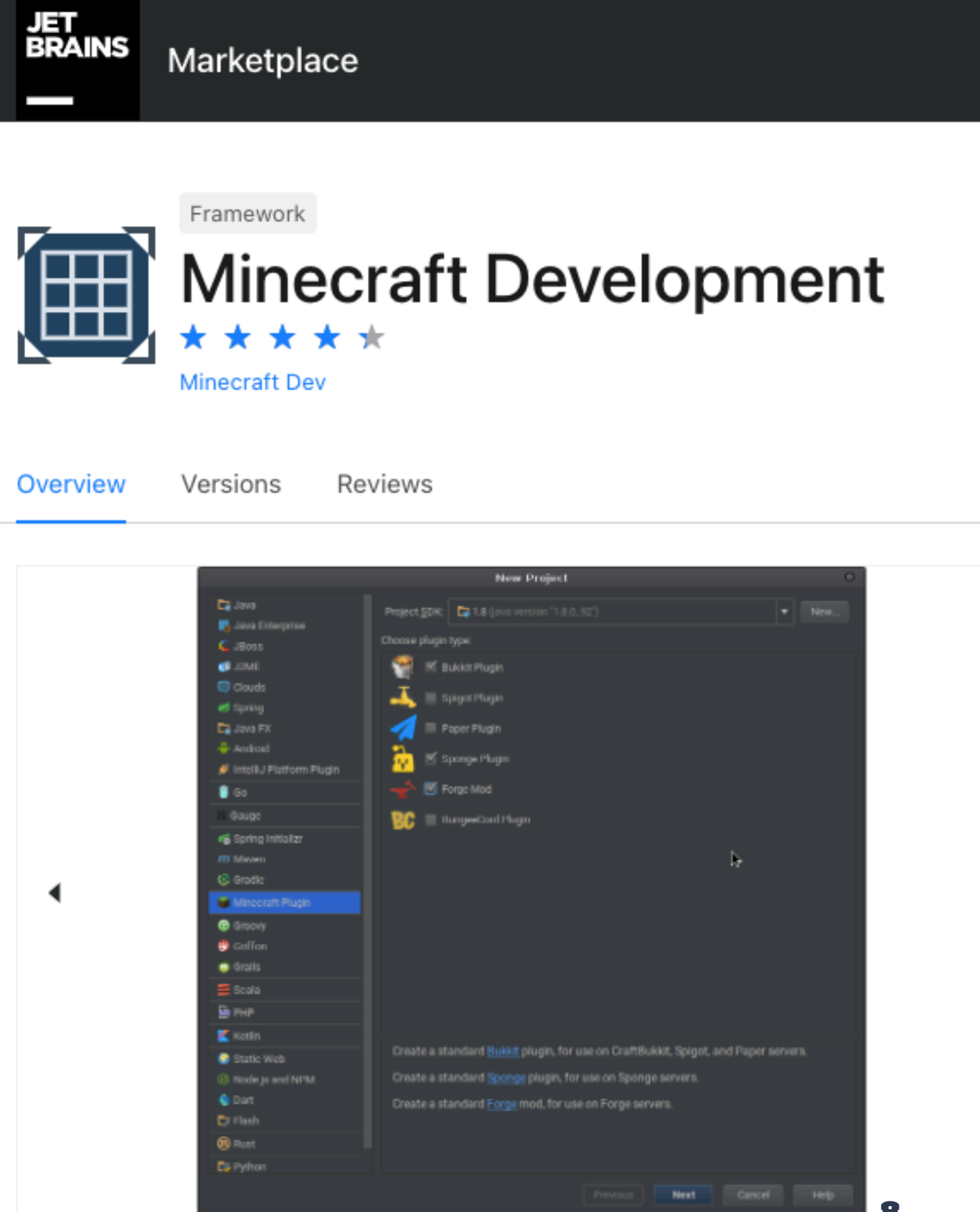
» Plugin(s)

All systems
https://www.jetbrains.com/idea/

IntelliJ IDEA

JET
BRAINS

"MINECRAFT DEVELOPMENT" FOR INTELLIJ IDEA

» All-in-one framework for Minecraft development

All systems
Available from https://plugins.jetbrains.com/plugin/8327-minecraft-development or from the IDEA desktop app

MINECRAFT CLIENT (DUH)

CONFIGURATION: PAPERMC

1. Run in terminal
   ```
   java -jar papermc.jar nogui
   ```

2. Say yes to EULA
   ```
   Set eula=true in eula.txt
   ```

3. Run again
   ```
   java -jar papermc.jar nogui
   ```

CONFIGURATION: NEW MINECRAFT PROJECT IN INTELLIJ

» Plugin structure

(Live presentation)

PIPELINE

» Building artifacts (JAR)

» Self-copying plugin file

» Self-starting start.sh / start.bat

(Live presentation)

CRUCIAL CLASSES

» Events (and their handlers and priorities)

» Permission nodes

» Commands (through Overrides)

(Live presentation)

CHALLENGE: OBJECTS

Problem: no new objects.

Some solutions:
- Modifying the behavior of existing objects through events
- Using extra plugins for server-side object creation with custom textures