ANNEX A · PRACTICAL 5.9 · CAN THIS MACHINE BUILD APPS?

Name: _____ **Date:** _____

Tramuntana Apps wants to know which of its computers can be used for development. You measure two machines, install a Java toolchain on one, and write the specification of the laptop for a new Android developer.

Official requirements	VS Code	IntelliJ IDEA	Android Studio	Android Studio + Emulator
RAM	1 GB	8 GB (3 GB free for the IDE)	8 GB	16 GB · recommended 32 GB
CPU	1.6 GHz or faster	4 cores	VT-x / AMD-V, newer than 2017	the same
Free disk	under 500 MB	10 GB	8 GB	16 GB · recommended SSD, 32 GB
Screen	—	1280 × 720	1280 × 800	recommended 1920 × 1080
Linux C library	glibc 2.28+	glibc 2.28+	glibc 2.31+	glibc 2.31+

Source: the vendors' own pages (Microsoft, JetBrains, Google), read in October 2026. Each running virtual device takes about 4 GB of RAM more.

Part A — Measure

1 **The VM.** In `deb-lab`, run each command and write the answer in the column deb-lab.

2 **The host.** Open a terminal on the Ubuntu PC (not in the VM) and fill the column host.

	deb-lab	host
`nproc` — processor threads		
`free -h` — line Mem, column total		
`df -h /` — column Avail		
`ldd --version | head -1` — glibc version		
`grep -Ec '(vmx|svm)' /proc/cpuinfo` — 0 means no virtualisation		

DONE WHEN All ten boxes have a number.

3 **Verdict.** Write YES or NO, and for each NO the number that fails.

	VS Code	IntelliJ IDEA	Android Studio	with Emulator
deb-lab				
host				

DONE WHEN Every NO has its reason, for example "4 GB < 8 GB".

Part B — Install a toolchain in `deb-lab`

4 **Before.** `java -version` answers: _____ `df -h /` → Used: _____

5 **Install.** `sudo apt update`, then `sudo apt install default-jdk-headless git`. Before you press Y, read:
After this operation, _____ of additional disk space will be used.
`java -version` → _____ `javac -version` → _____ `git --version` → _____

DONE WHEN The three commands answer with a version number.

6 **Where is it?** `which java` → _____ `readlink -f /usr/bin/java` → _____
Why does the shell find `java` without the full path? _____

7 **Compile and run.** `mkdir ~/hello-java`, `cd ~/hello-java`, `nano Hello.java`, and type exactly:

```
public class Hello {
    public static void main(String[] args) {
        System.out.println("Hello from Java " + System.getProperty("java.version")
            + " on " + System.getProperty("os.name"));
    }
}
```

`javac Hello.java`, then `ls`. New file: _____ `java Hello` prints: _____

DONE WHEN Your program prints one line with the Java version and the word Linux.

8 **JAVA_HOME.** Add this line at the end of `~/.bashrc`: `export JAVA_HOME=/usr/lib/jvm/default-java`
`source ~/.bashrc`, then `echo $JAVA_HOME` and `$JAVA_HOME/bin/java -version`.

DONE WHEN The last command prints the same version as in task 5.

9 **After.** `df -h /` → Used: _____ The toolchain cost: _____ of disk.

Part C — Decide

10 Tramuntana Apps hires an Android developer. Write the laptop you would ask for and justify each line with a number from the table.

	Minimum that works	**Comfortable**
RAM		
CPU		
Disk		
Screen		

Why can `deb-lab` not be that machine? Two reasons: _____

_____

Hand in: `practical-5.9-surname.md` on Google Classroom before Thursday 08/04: the tables of parts A and C, the outputs of tasks 5–8, and five lines comparing this laptop with the one you chose in Practical 1.3.
Marks (10): part A 3 · part B 4 · part C 2 · clear report in Markdown 1.

Exit ticket. Circle one answer.

1. Which tool turns `Hello.java` into `Hello.class`?
   a) `java` b) `git` c) `javac` d) `apt`
2. A JDK is…
   a) an editor b) the compiler, runtime and tools to develop in Java c) an emulator d) a Linux distribution
3. Google's minimum RAM for Android Studio with the emulator is:
   a) 2 GB b) 4 GB c) 8 GB d) 16 GB
4. Why does the Android emulator need VT-x or AMD-V?
   a) It is a virtual machine b) It draws 3D graphics c) It compiles Java d) It needs the Internet
5. `JAVA_HOME` is…
   a) the folder of your Java files b) a variable that tells tools where the JDK is c) a command d) a package