Temi Apps – Quick Start Manual

Mohawk College | Applied Research I | Winter 2023

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Created November 10, 2022

Updated January 17, 2023

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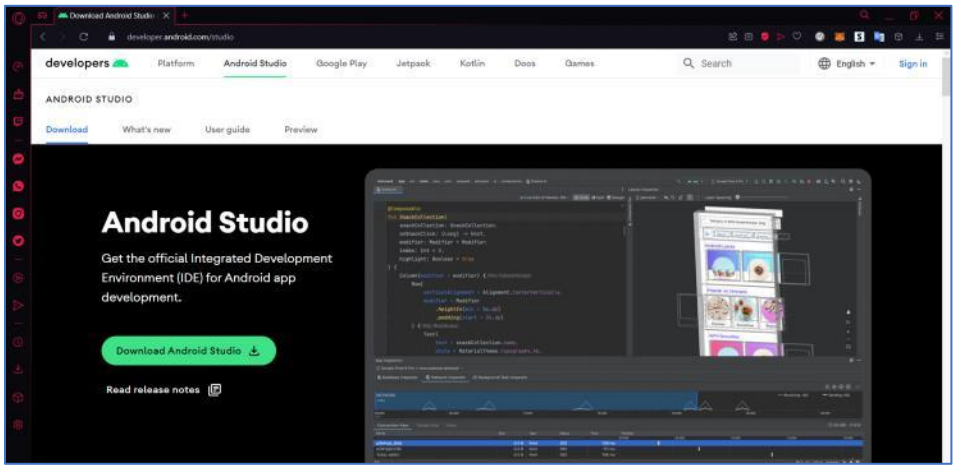
Getting Started

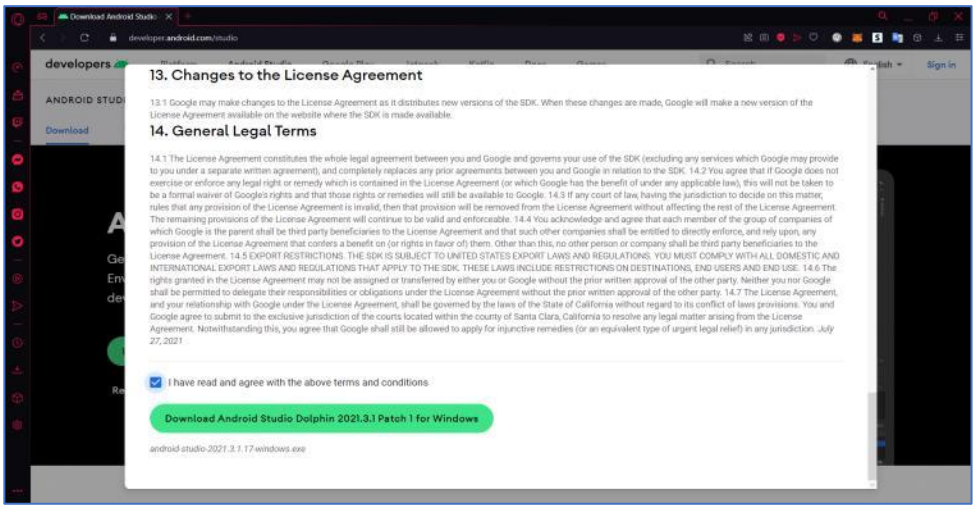
Install Android Studio

1. Access the Android Studio download page from https://developer.android.com/studio.
2. Click the green button 'Download Android Studio' to begin download.



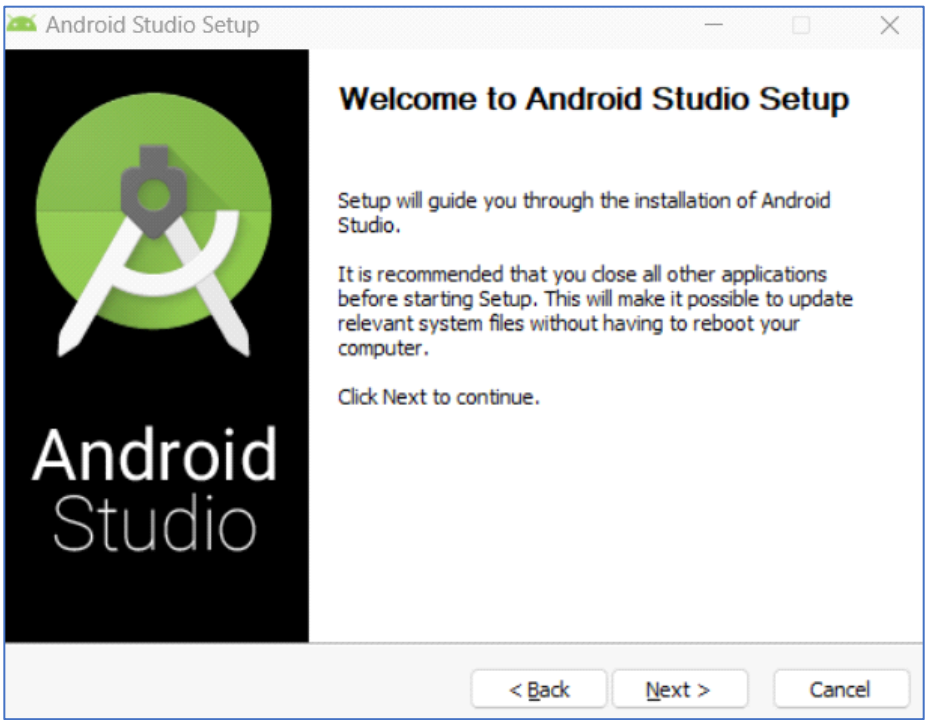
1 – Android Studio download page

3. Accept the terms and conditions and select the download button.



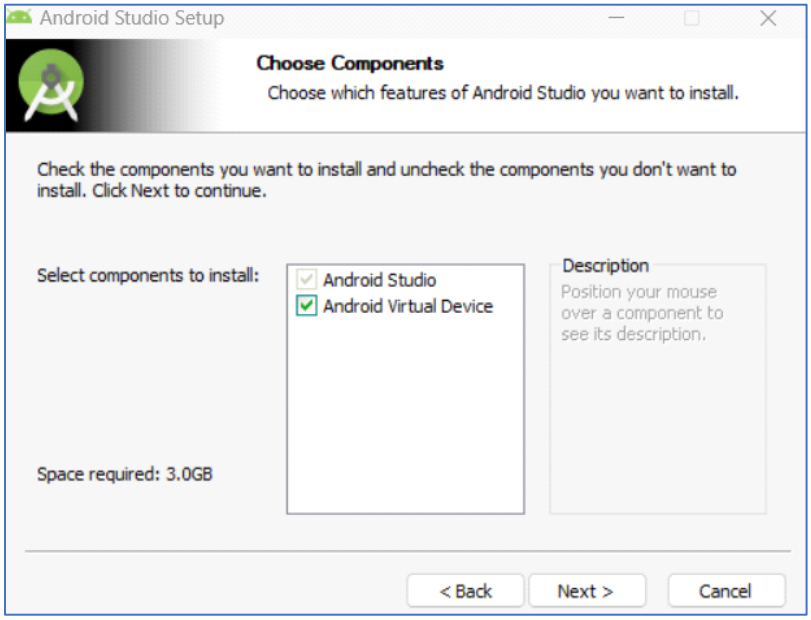
2 – Terms & Conditions

4. Once downloaded, unzip the file, and run the executable file. This opens a new setup window.



3 – Installation setup wizard

5. Select ‘Next’ to continue.
6. Ensure 'Android Virtual Device’ is checked. Select ‘Next’.

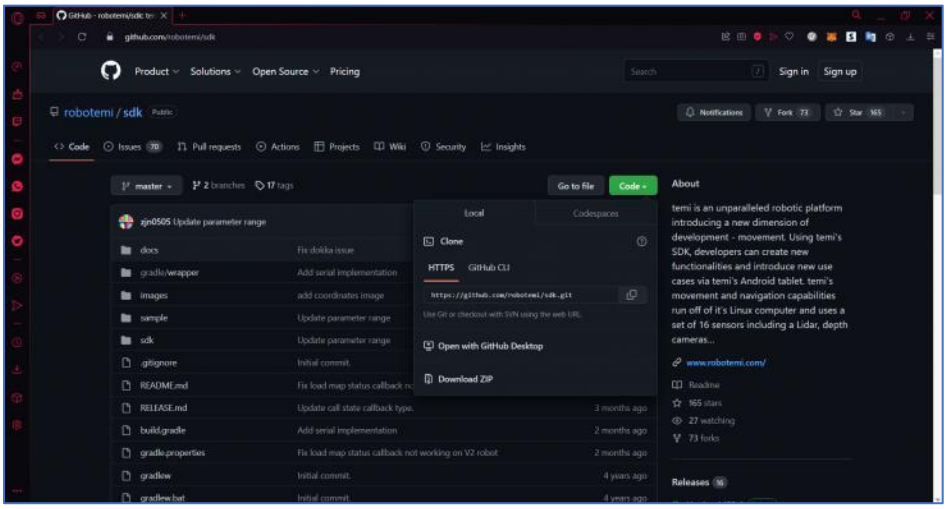


4 – Second page of the installation wizard.

7. After the installation completes, close the installation wizard.

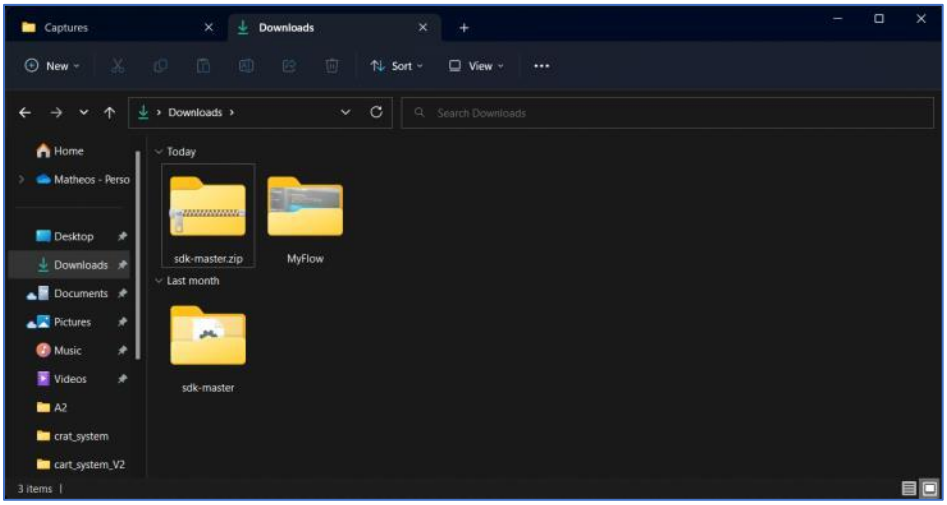
Importing the Temi SDK

1. Navigate to the Temi Github page at https://github.com/robotemi/sdk.
2. Click on the green ‘Code’ button, then click 'Download ZIP'.



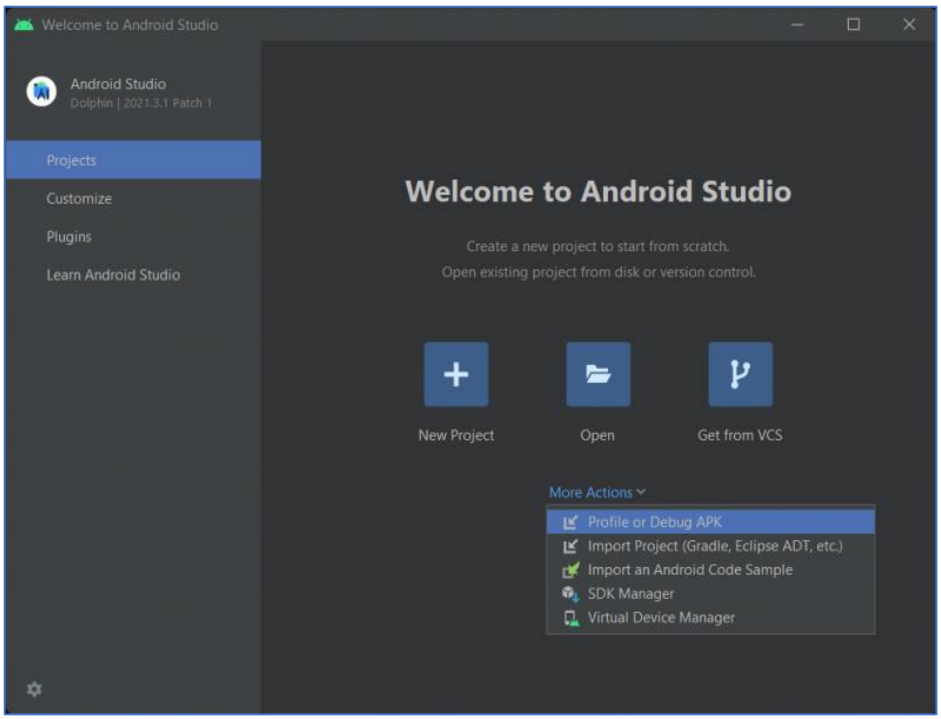
5 - Github page for the Temi SDK

3. Save the file to a directory that can be easily accessed.
4. Unzip the file. Verify there is a new file in the directory named 'sdk-master'.



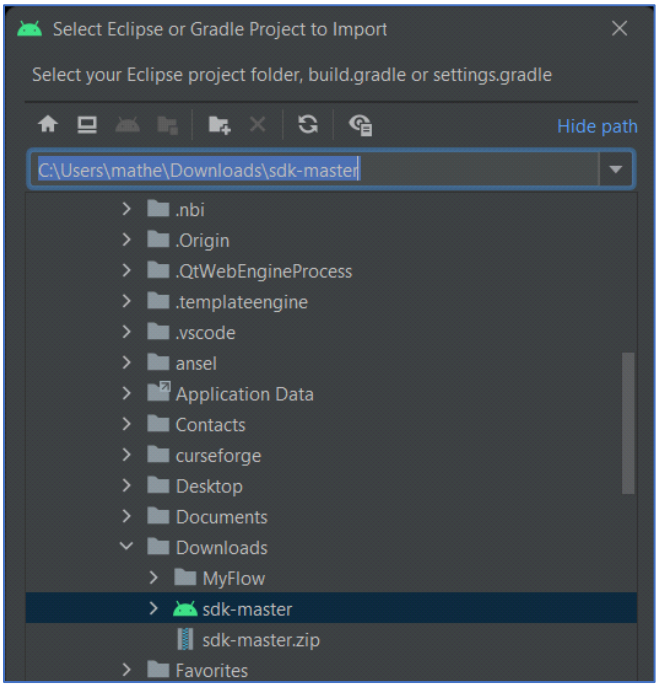
6 - SDK Master file location

5. To import the SDK file, launch Android Studio and wait for the Start Screen to appear.
6. At the bottom of the screen, select ‘More Actions’, then select ‘Import Project’.



7 – Android Studio startup screen.

7. Browse to the SDK file ‘sdk-master’, select it, and press OK.



8 - File Selection window

This imports the Temi SDK data and loads it in the Android Studio IDE.

Configuring the Emulator

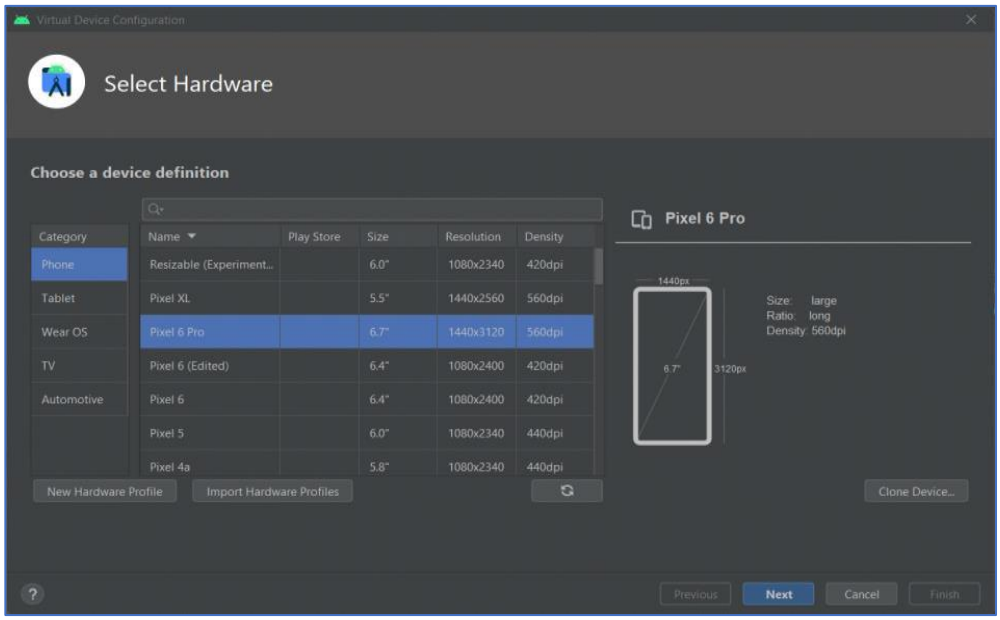
Android Studio provides device emulators to make development more portable. This way, you don't need to own an Android device to test your code. These steps show how to set up an emulated device.

1. In the new Android Studio project from the SDK import (see previous steps), click 'No Device' in the dropdown menu at the top right of the window, then select 'Device Manager'.

   Alternatively, select **Tools > Device Manager** from the menu bar.

9 - Adding a new Android device.

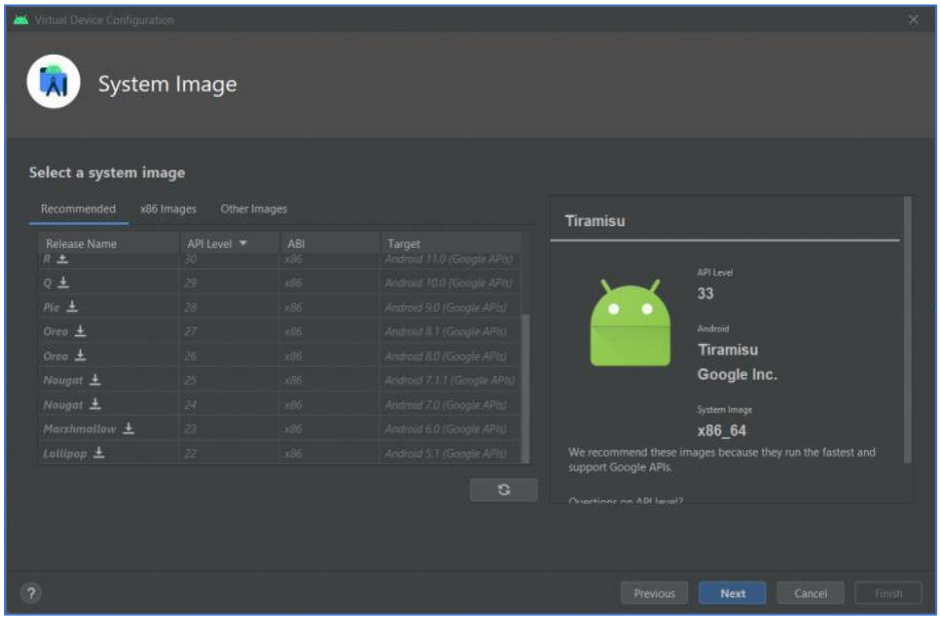
2. A new side bar appears on the right side of the screen. Click 'Create Device' at the top-left of the side bar – this opens a window with a list of available emulators.



10 - Emulator device list.

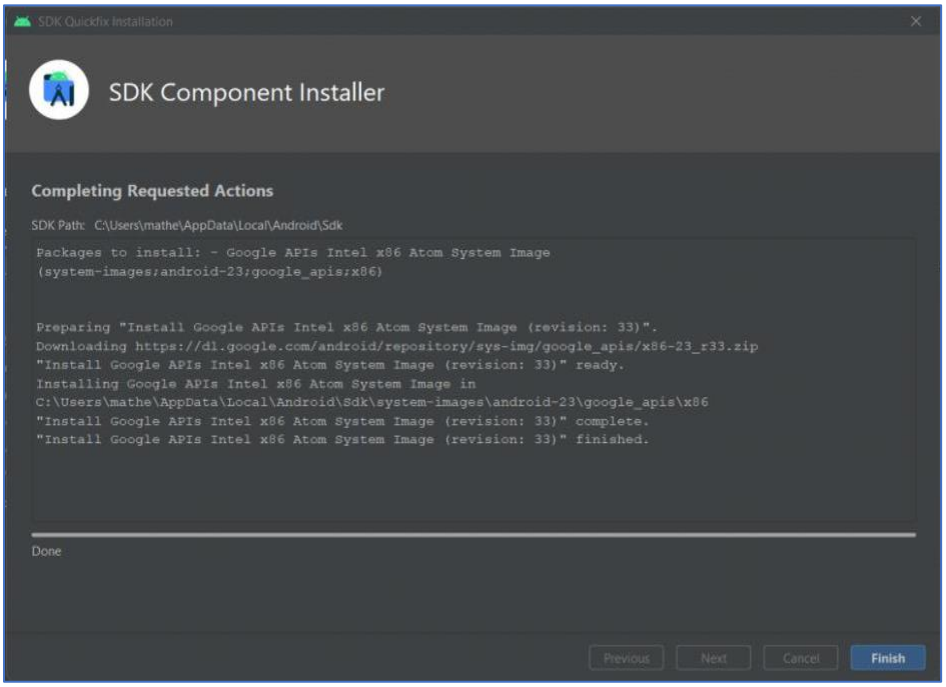
3. For this demo, choose the Pixel 6 Pro and click next (other hardware options are viable).

4. In the next window, choose the Android version by selecting the download icon next to the release name ‘Marshmallow’, which corresponds with Android 6. This is the version that the Temi SDK runs on.



11 - Choosing the device's Android version.

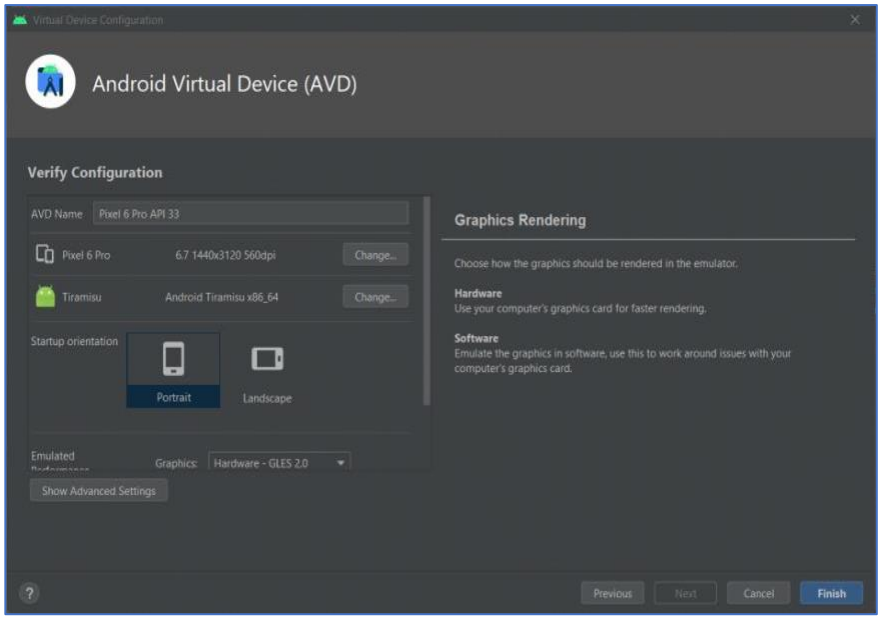
5. A download window appears – wait for the download to complete, then click the ‘Finish’ button.



12 - Installation progress window.

6. From the System Image window, click the ‘Next’ button.

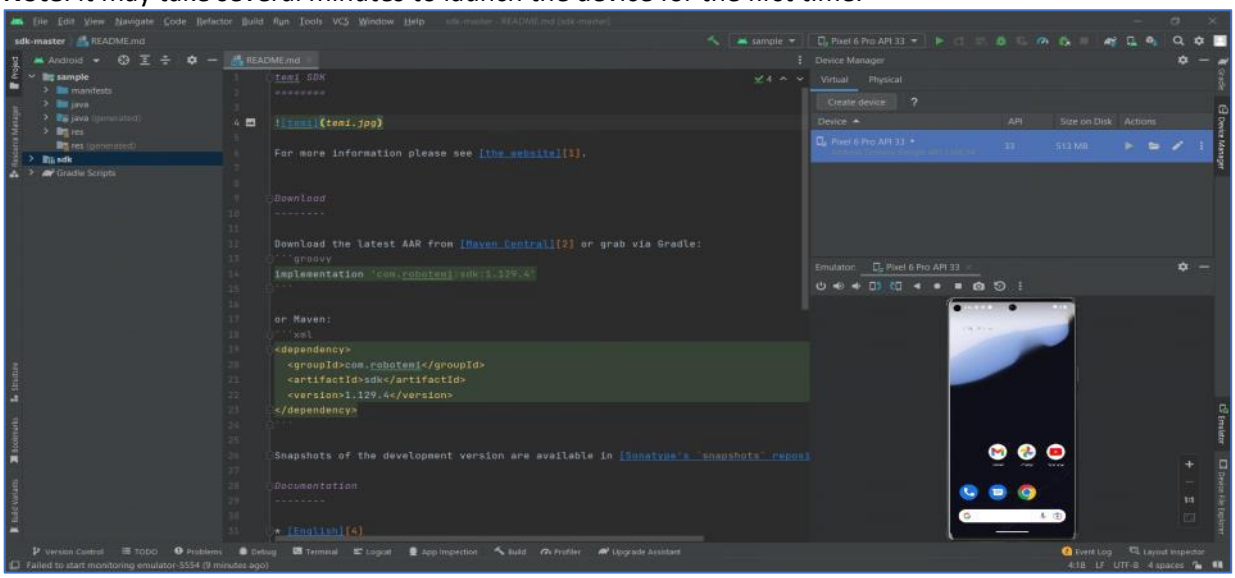
7. Review and verify the selected settings. If any changes are desired, then make them and select the ‘Finish’ button.



13 - Verify Configuration screen.

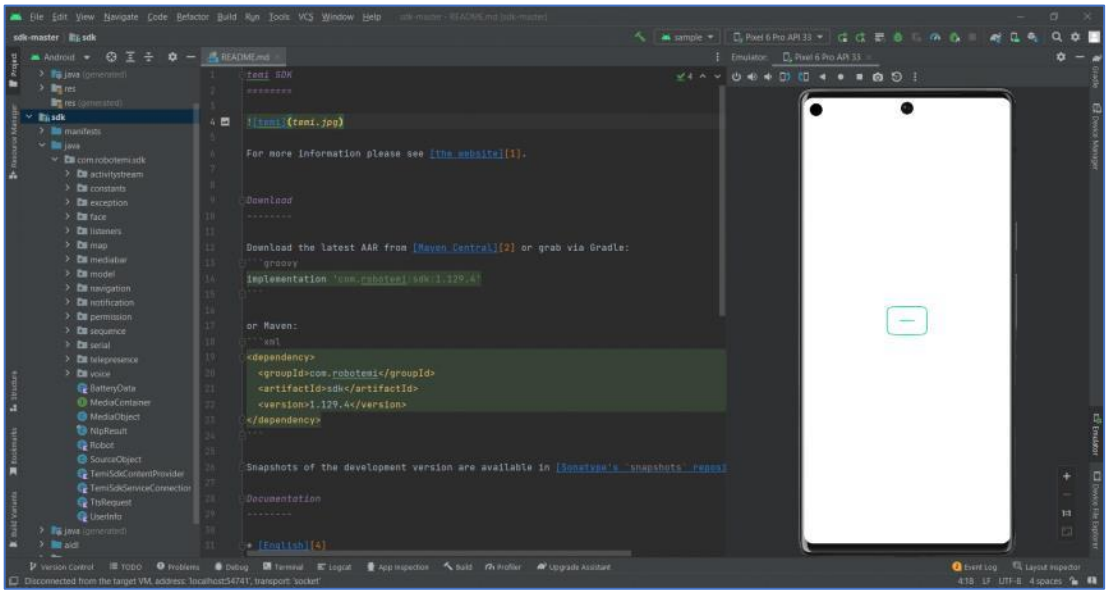
8. The new device is now in the device list side bar. Click the Grey ‘Run’ (triangle) button to test the emulated device.

Note: it may take several minutes to launch the device for the first time.



14 - Emulated device running in Android Studio.

9. Test the sample project by selecting the ‘Build’ icon followed by the ‘Run’ icon. The emulator should show a blank splash screen.

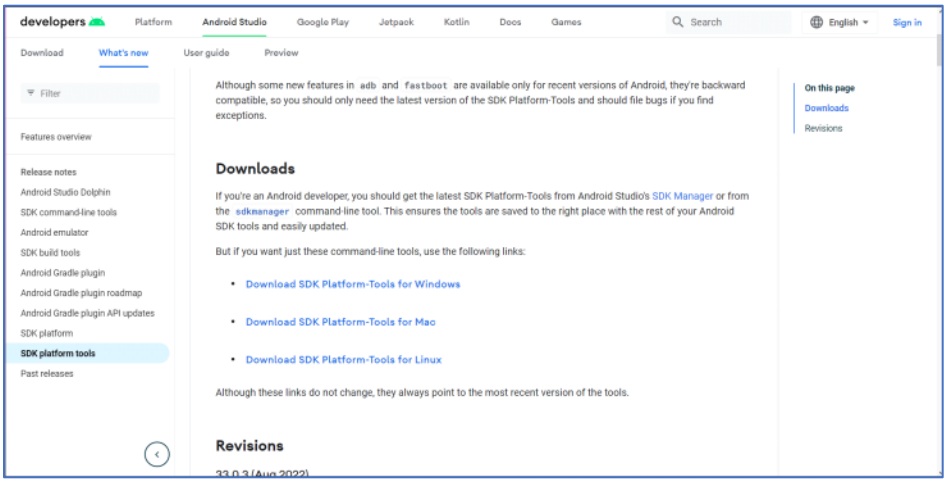


15 - Blank splash screen after compiling and running the Temi SDK.

Installing adb

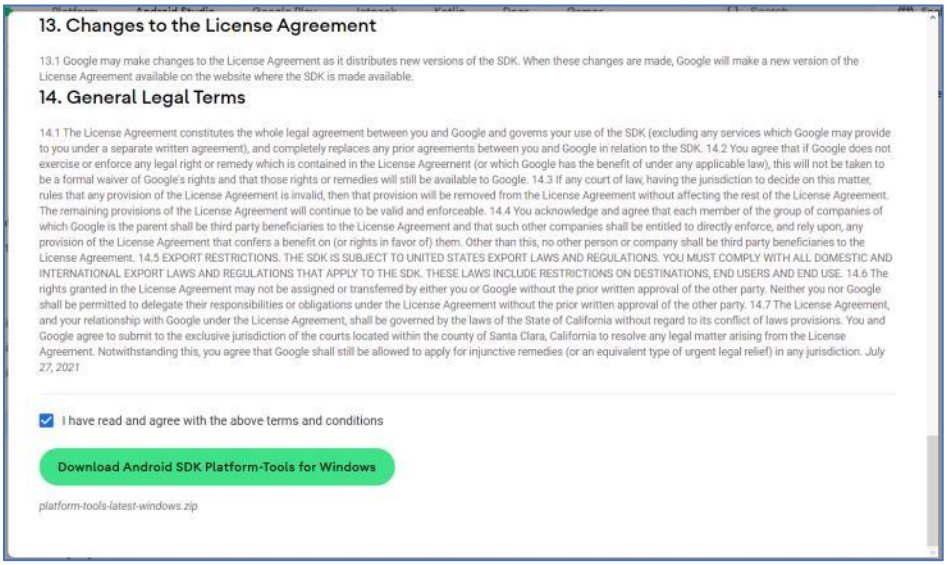
Android Debug Bridge (adb) allows users to connect their device (laptop/desktop/etc) to the Temi robot. These steps outline how to install and run adb on a device.

1. Navigate to the SDK Platform Tools page at https://developer.android.com/studio/releases/platform-tools.
2. Scroll to the Downloads section and select the link for your operating system.



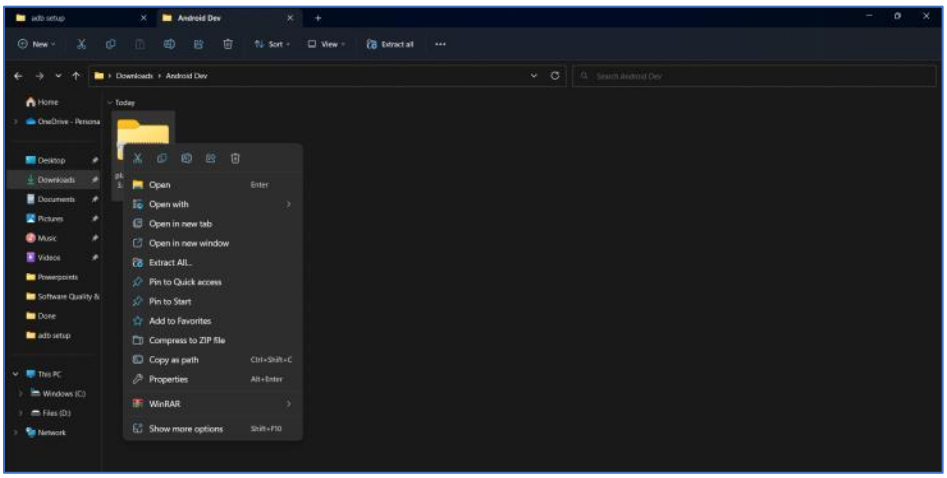
16 - adb download page.

3. Agree to the terms and conditions then select the download button to start the file download.



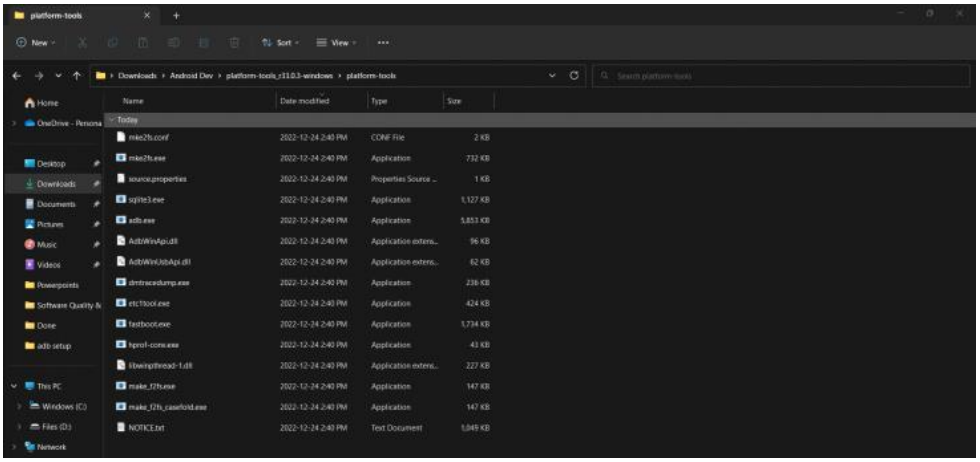
17 - Terms and conditions pop-up.

4. Once the files have been downloaded, open the download location, and unzip the files.



18 - Extracting adb files from the zipped download.

5. After extracting the files, open the new folder and explore the files.



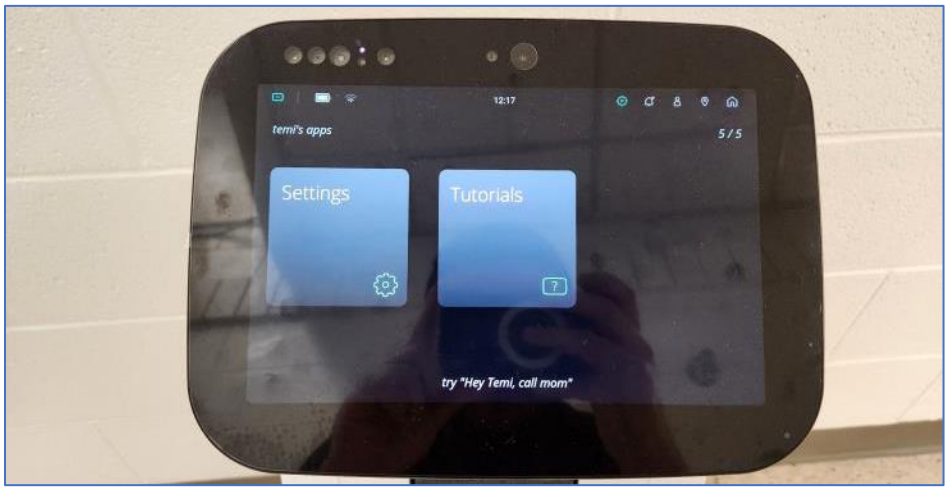
19 - adb files after extraction.

Preparing Temi for Connection

In order to connect a device to Temi, the connection port must be opened via Temi's settings menu.

1. On the Temi tablet, select the waffle menu icon at the top right of the screen. This opens a window that shows all apps on the Temi tablet.

2. Scroll to the app named 'Settings' and select it to launch it.

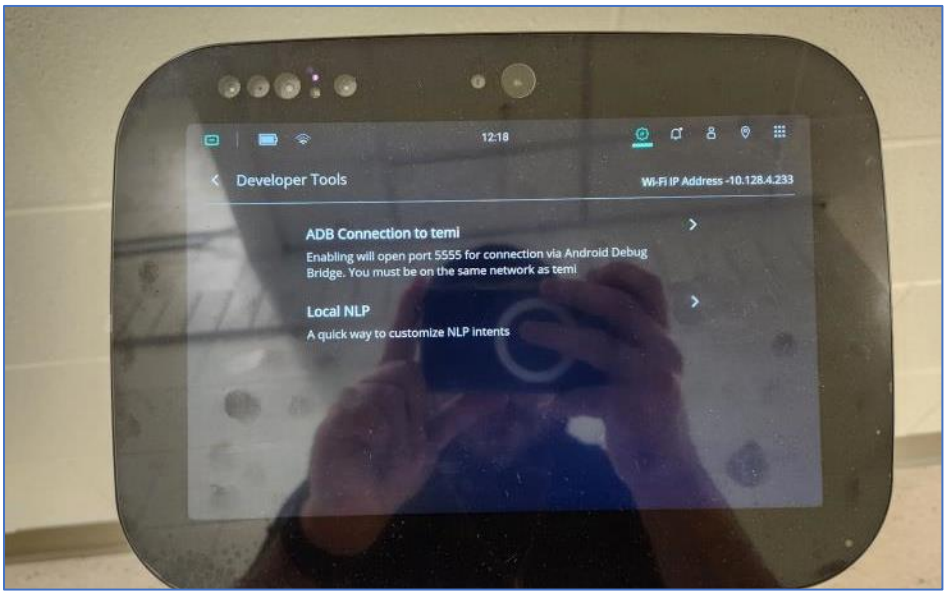


20 - Apps screen showing the Settings app.

3. Select the 'Developer Tools' option.

21 - Developer tools option.

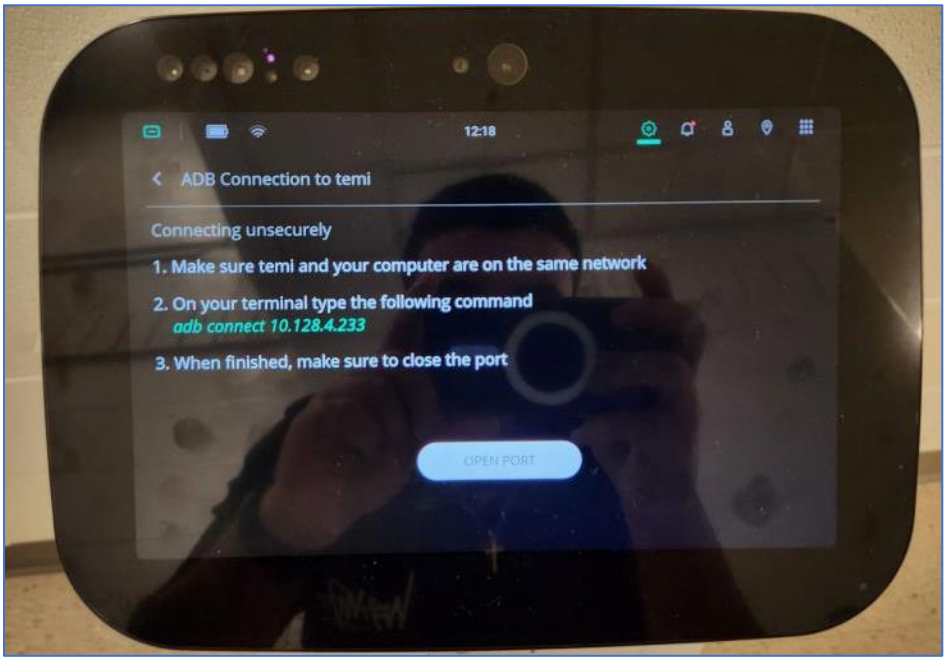
4. In the 'Developer Tools' menu, select 'adb Connection to temi'.



22 - Developer Tools menu.

5. Follow the steps on the screen. Save the Temi IP address somewhere for use in later steps.

6. Select the 'Open Port' button to enable external connections to Temi.

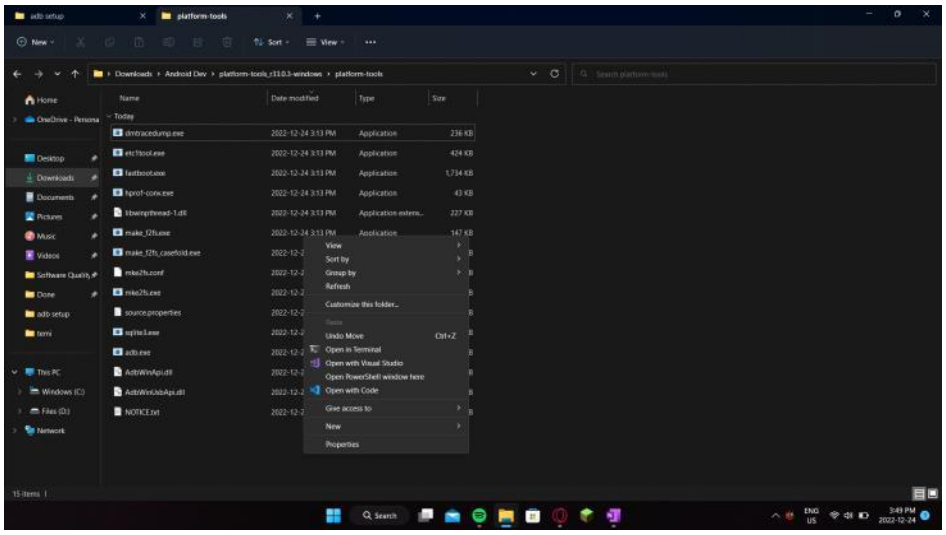


23 - adb connection menu.

Connecting To Temi

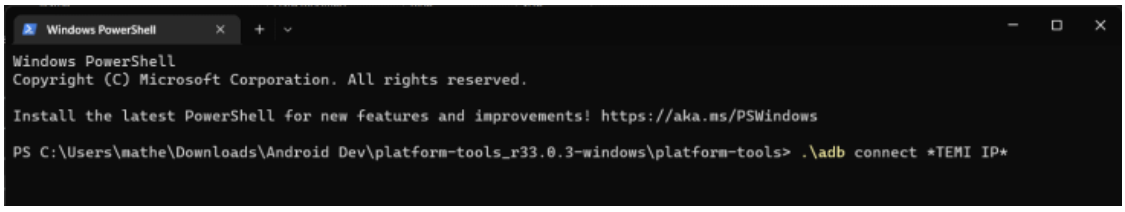
This section explains how to use adb to connect a user's device to Temi.

1. Navigate to the directory where adb was downloaded in a previous step.
2. Open the directory in a terminal (Protip: use PowerShell in Windows or Terminal in MacOS). This can be accomplished in one of the following ways:
    - GUI method: In the directory, right click an empty space while holding the shift key, then select 'Open In Terminal'.
    - Windows PowerShell or MacOS Terminal: Use the 'cd' command to change directories to the proper location.



24 - Directory containing the adb files, and the right-click menu options.

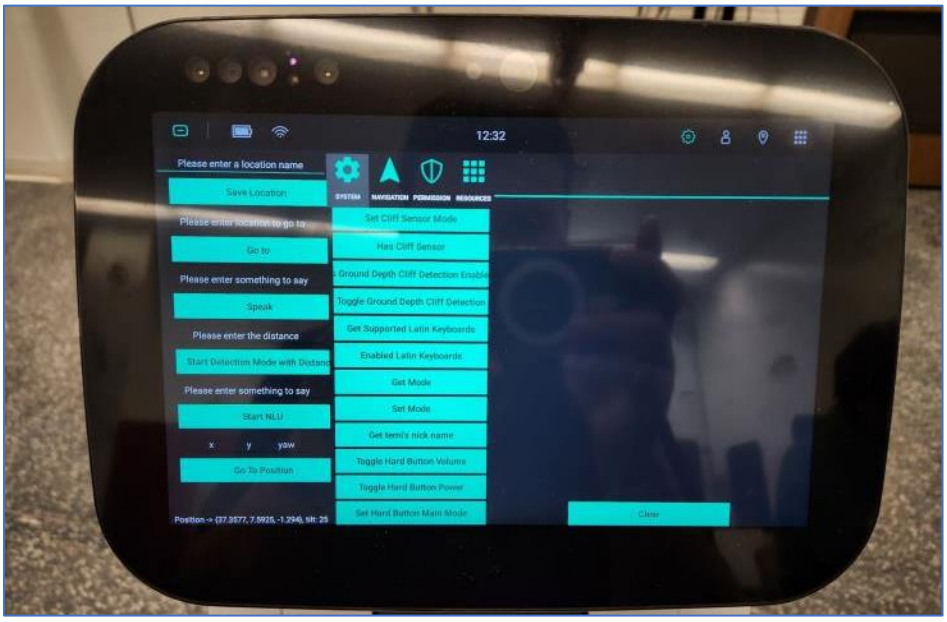
3. Run one of the following commands in the terminal to start the connection to Temi, replacing <TEMI IP> with the Temi IP address found in previous steps. Note that depending on the device environment's configuration, the './' may need to be omitted.
    - *.\adb connect <TEMI IP>*
    - *adb connect <TEMI IP>*



25 - PowerShell window example of using the adb command.

4. Once successfully connected to Temi, return to Android Studio.
5. Confirm that Temi shows as the device on which to run the SDK.
6. Select 'Run' to launch the preconfigured 'Sample' program on Temi.

7. Check Temi's screen – it should display an app with several buttons. This means that the app in Android Studio is successfully running on Temi.



26 - The sample app running on Temi.

8. Once finished, be sure to disconnect from Temi. This can be done by running one of the following commands in the terminal:

    - *.\adb disconnect <TEMI IP>*
    - *adb disconnect <TEMI IP>*
    - *adb disconnect all*
    - *adb disconnect*

9. Close the Temi connection by clicking the 'Close Port' button on Temi's screen.

Connecting Android Studio to GitHub

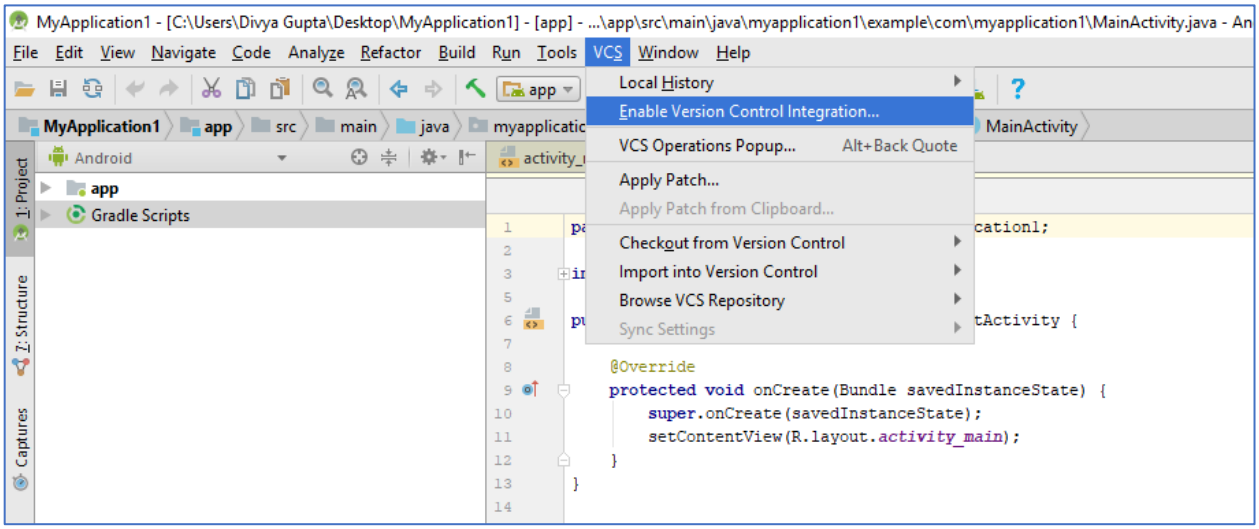
Installing git

Visit the official git site to download git on your device: https://git-scm.com/book/en/v2/Getting-Started-Installing-Git. Once this is done, git can be integrated with Android Studio.

Steps taken from here: https://medium.com/code-yoga/how-to-link-android-studio-with-github-312037a13b99

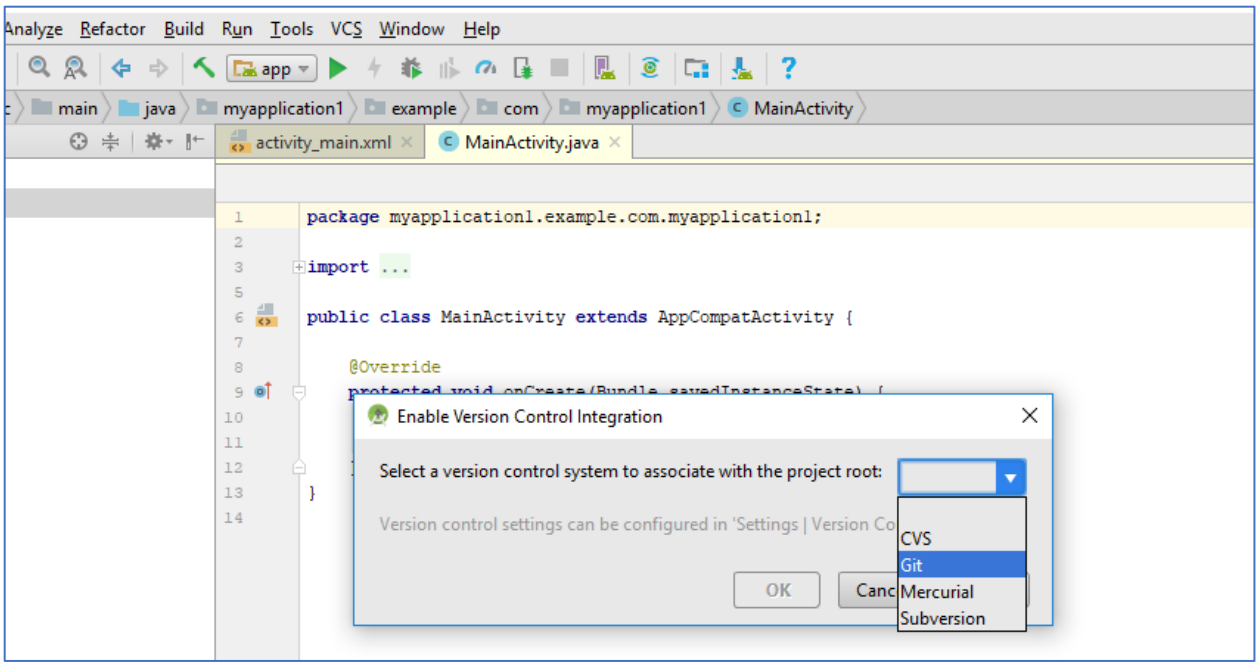
Enabling git in Android Studio

1. Enable Version Control Integration on android studio. In the toolbar, select VCS > Enable Version Control Integration.



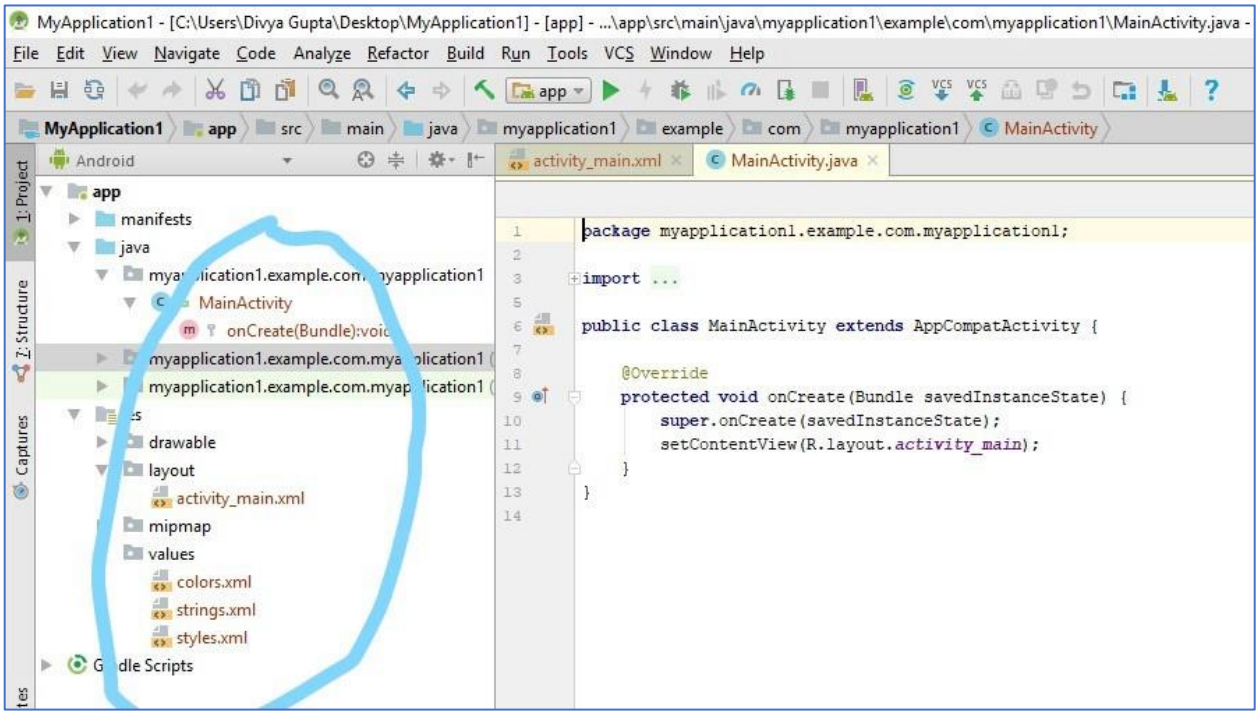
27 – Enabling version control in Android Studio.

2. In the pop-up window, select 'Git' from the dropdown menu and press 'OK'.



28 - Select Git as the version control system.

3. Note that this action turns files in Android Studio red.



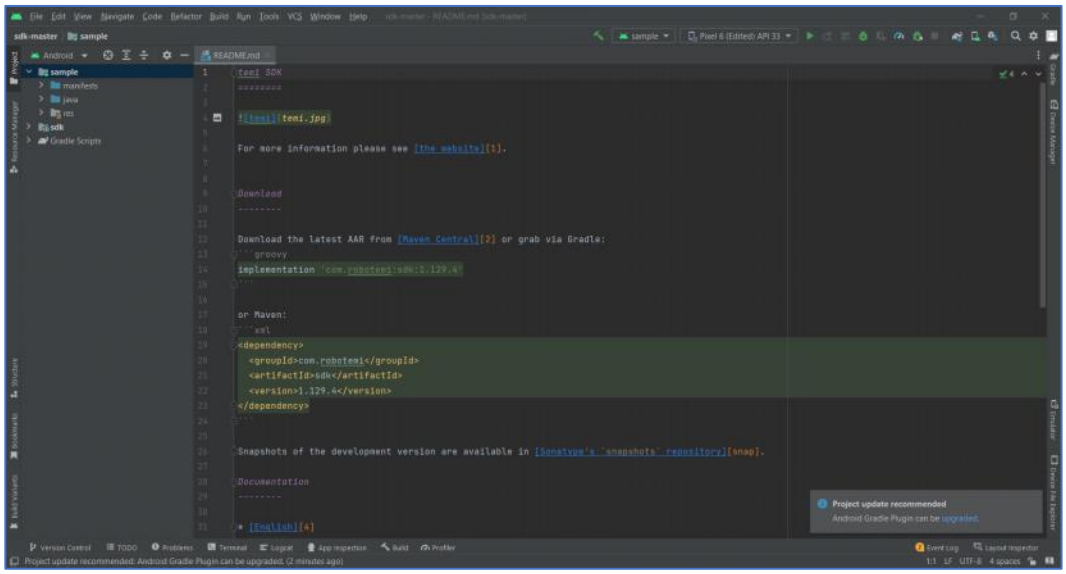
29 - Integrating git modifies the color of project files.

Troubleshooting

Software Out of Date

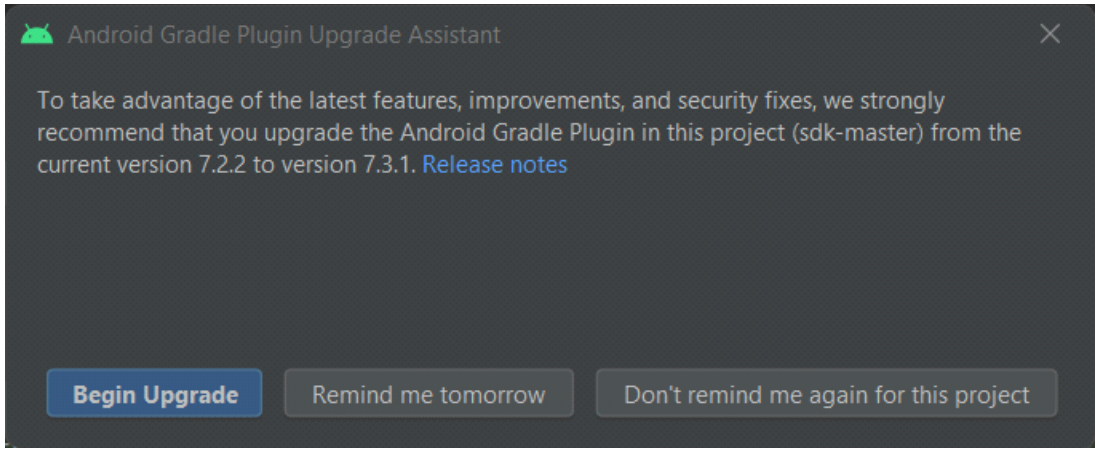
After importing the SDK and configuring an emulated device, the next step is to compile the SDK and verify that it is functional.

1. Select the 'Upgrade' button on the popup on the bottom right corner of the window.



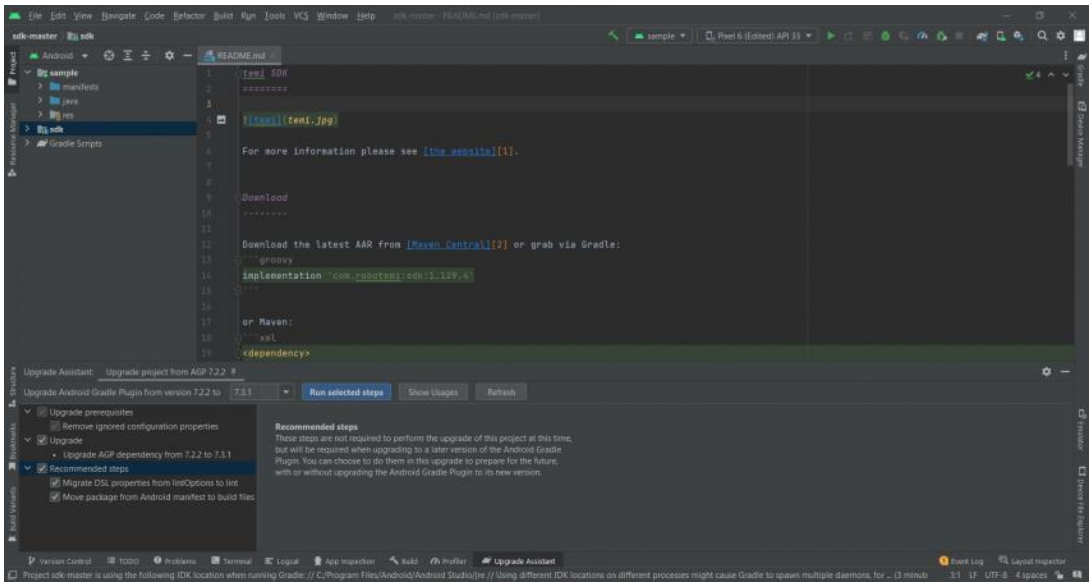
30 - Gradle upgrade popup.

2. A new window will open telling you about the Gradle Upgrade, click 'Begin Upgrade'.



31 - Gradle upgrade window.

3. The Gradle Upgrade window will close and at the bottom of your IDE a new section will open.
4. Make sure the option 'Run Selected Steps' is checked/active.
5. Click 'Begin Upgrade'.



32 - Project upgrade progress.

Errors When Connecting to Temi

Sometimes, when a laptop is attempting to connect to Temi using adb, the connection hangs and the user receives an error message in their terminal.

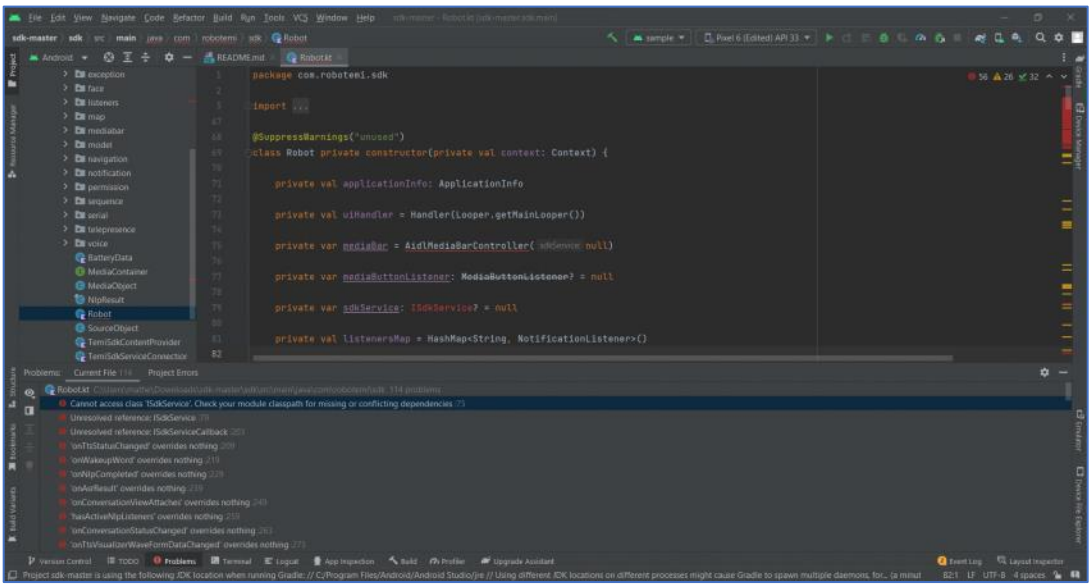
Ensure no other users are connected to this Temi. Have team members each run ‘adb devices’ to check if they are connected, and then ‘adb disconnect’ to disconnect from Temi.

Ensure that the laptop and Temi are connected to the same wi-fi network.

Use a terminal application to run the ‘ping’ command, and ping Temi’s IP address. Ensure that a response is received.

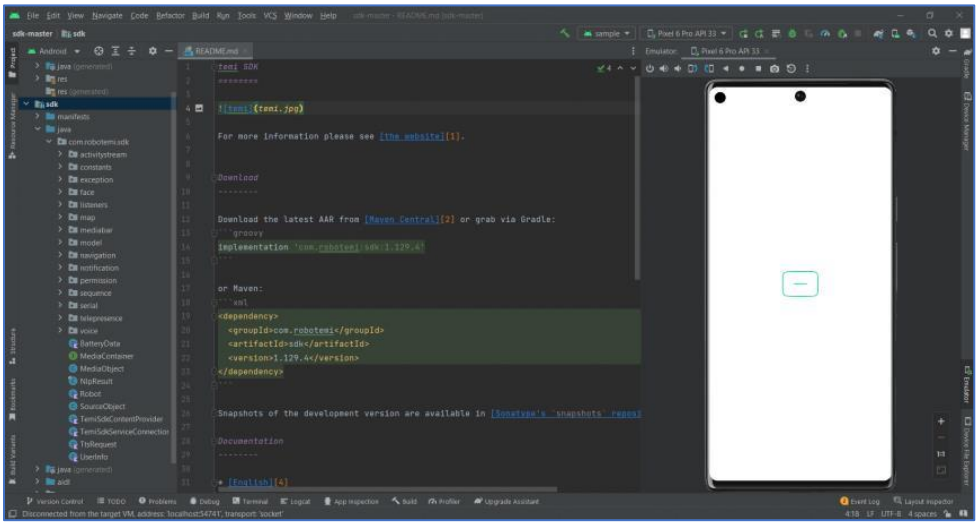
Errors During Compilation

After importing the SDK and configuring an emulated device, some users may run into compilation errors. Some of the errors may be in the SDK classes where some interfaces are not accessible or have overwrite errors.



33 - Errors in the SDK after attempting compilation.

1. Click the run or debug button to fix these problems.
2. The SDK will start to compile and will be launched on the virtual device that we created earlier.
3. When the SDK is compiled and launched on the virtual device it will only get to the splash screen and will not go any further.
4. We use the virtual device to confirm that the SDK is compiled properly and by getting to the splash screen it confirms that the SDK is functional.



34 - Temi splash screen appearing in the emulator.

Appendix

External Resources

Temi User Manual: https://fccid.io/2ASJLTEMIS1/User-Manual/User-Manual-4211678.pdf

Temi Technical Specifications (accessible to Mohawk College users only): https://mohawkcollege365.sharepoint.com/:b:/s/TemiRobot/EVyJjeRIDr1Eslhim0lnnEABetckQZWer-DDKA4_qXqqcA?e=J2JOPN