

IEMS5722 Mobile Network Programming and Distributed Server Architecture (Fall 2024)

Assignment 1

Expected time: 3 hours

Learning outcomes:

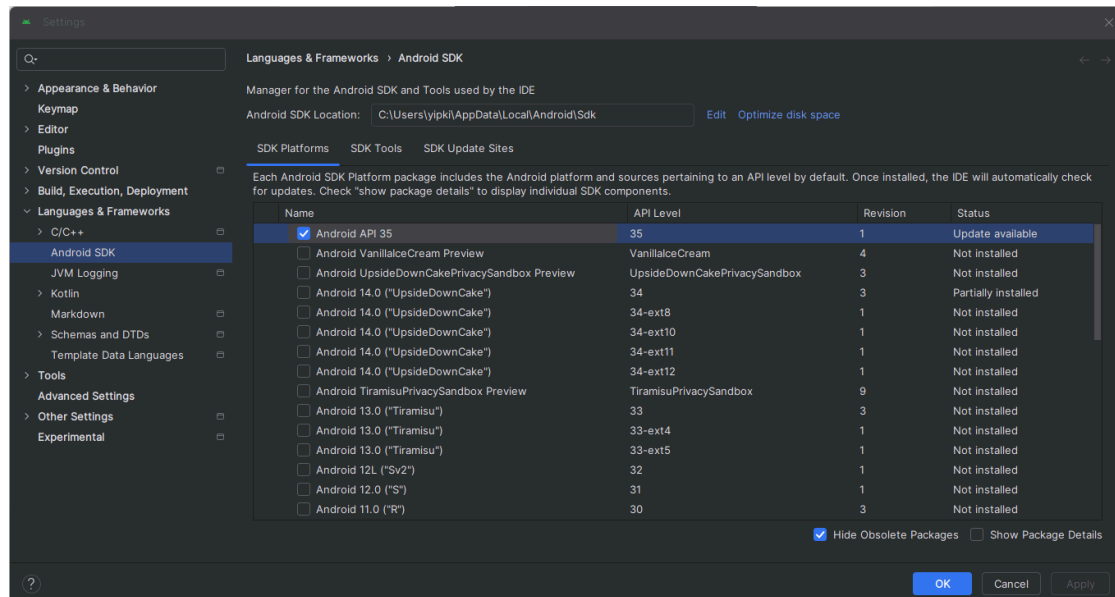
1. To set up the Android development environment with Android Studio.
2. To create the first Hello World project on a virtual or physical device.
3. To understand the Android project structure, especially TextView and res/drawable, in Android Studio.

Instructions:

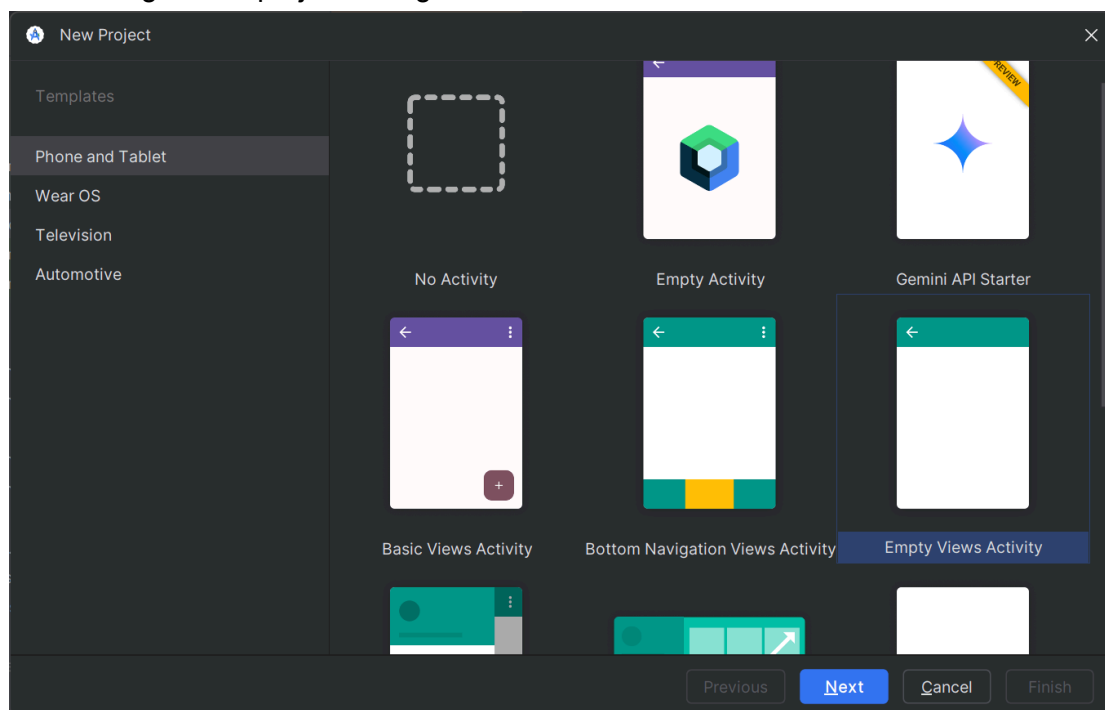
1. Do your own work. You are welcome to discuss the problems with your fellow classmates. Sharing ideas is great, and do write your own explanations/comments.
2. If you use help from the AI tools, e.g. ChatGPT, write clearly how much you obtain help from the AI tools. No marks will be taken away for using any AI tools with a clear declaration.
3. All work should be submitted onto the blackboard before the due date.
4. You are advised to submit a .pdf file and a .zip file containing all your work.
 - 1155xxxxxx_Assignment1.pdf: The short report for your work. We will grade your work based on the short report.
 - 1155xxxxxx_Assignment1.zip: The zip file containing your Android Studio project. In general, we will not check this archive in grading. In case, we found some problems in your report (meaning that you already lost some points in your report), we will refer to your project source code.
 - 1155xxxxxx is your student ID.
5. Do type/write your work neatly. If we find some problems in the screenshots in your report, you will lose some points, even if those contents are in the source files.
6. If you do not put down your name, student ID in your submission, you will receive a 10% mark penalty out of the assignment 1.
7. Late submissions will receive a 30% mark penalty.
8. This assignment accounts for 2% of your final grade.
9. Due date: 26th September, 2024 (Thursday) 23:59.

Preparations:

1. Download and install the Android Studio via: <https://developer.android.com/studio>
2. Install the Android SDK Packages: Android API 35
 - We will stick to this environment throughout the course assignments.

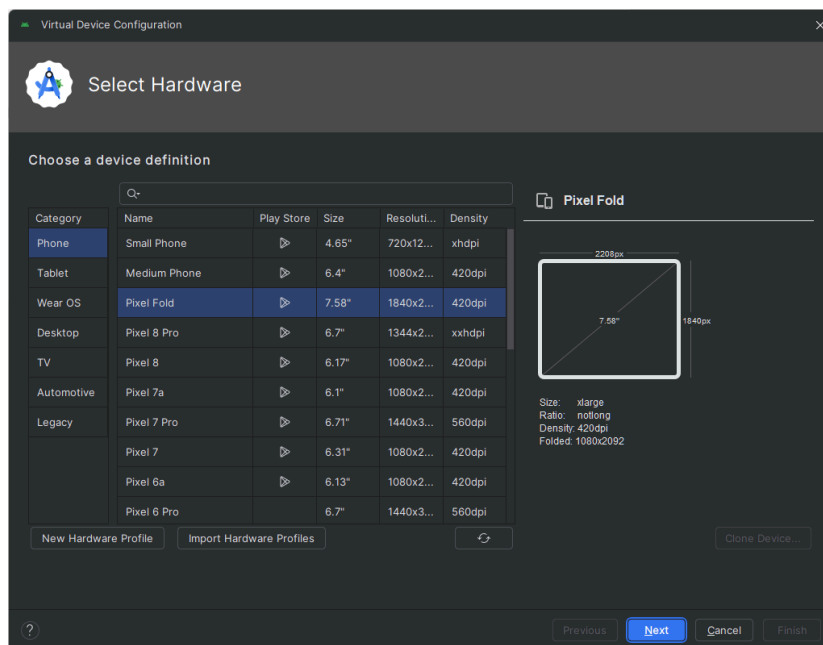
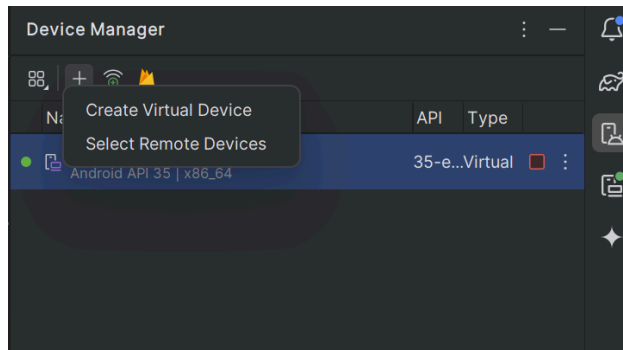


3. Create your first app (empty views activity project), as HelloWorldProject_1155xxxxxx, where 1155xxxxxx is your student ID.
 - Set the minimum API level as API 24.
 - Configure the project taking several minutes.



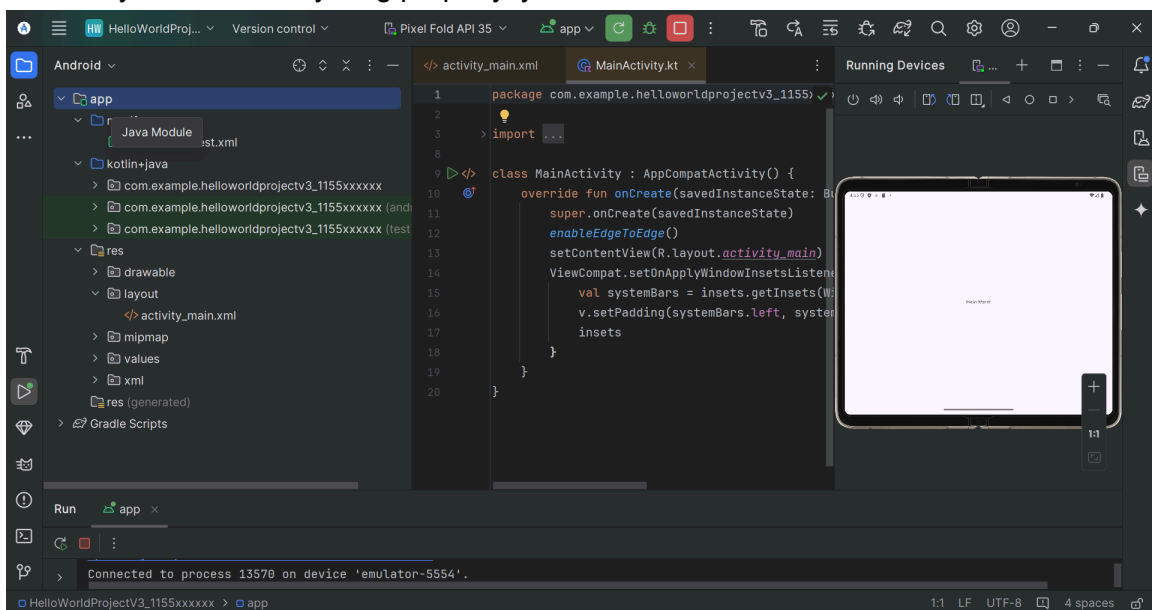
4. Create and manage virtual devices

- Go to Android Virtual Device (AVD) Manager, and install an android system image.
- Try Lollipop or Pixel phones, or other Android image with at least API level 24.



5. Run your application

- If you install everything properly, you will see:



6. Run your application with a physical device: (optional)
 - Change your Android phone to developer mode (Settings > About Phone > Build Number, or Settings > About Phone > Software Information > Build Number), by tapping Build Number 7 times.
 - Connect your computer with your android phone with a USB, or OEM driver (for Samsung).
 - Switch the phone to MTP mode.
 - Run the application in Android Studio.

Tasks:

1. Create a new TextView holding your student ID and student name in a single line. (50%)
 - Do not hard code your information in the XML file.
 - Create a TextView under res/layout and edit those texts accordingly
2. Change your app icon under the res/drawable folder. (50%)
 - Do not touch the XML files.
 - Create a particular folder for storing the icon.
 - No need to create different resolutions for your icon.

Resources:

1. Google Android Developer Guides
<https://developer.android.com/guide>
2. Android Style Resources
<https://developer.android.com/design/downloads/index.html>
3. Android API Reference
<https://developer.android.com/reference/packages.html>
4. Where to go if you have a question (apart from Google):
<https://stackoverflow.com/questions/tagged/android>