MASTER OF TECHNOLOGY

(INTELLIGENT SYSTEMS)

USER GUIDE

WingSpan

- Enhancing Birdwatching with AI

GROUP MEMBERS

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Accessing WingSpan Application

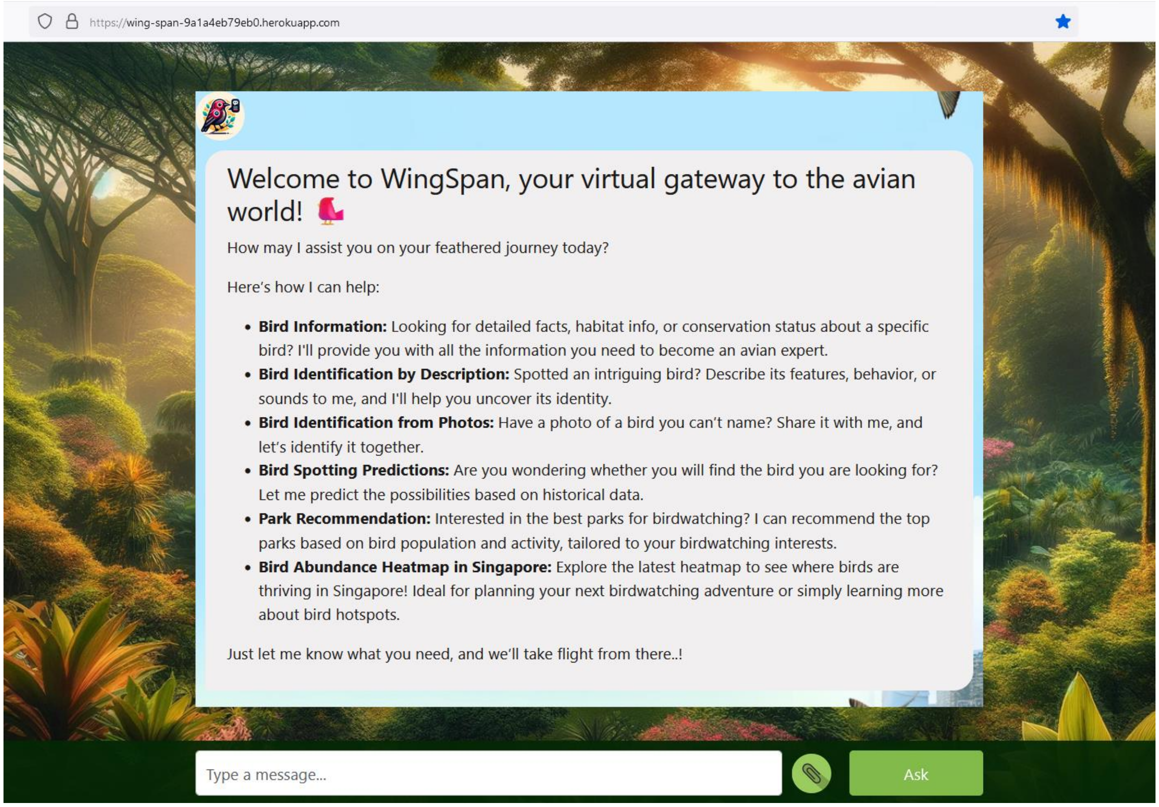
WingSpan is accessible both online and offline. This guide details on how to access the deployed online application as well as setup process for running the application locally (offline)

1. Accessing Online

The application is hosted on the Heroku cloud and can be accessed through the URL provided below.

URL: https://wing-span-9a1a4eb79eb0.herokuapp.com/

Interacting with the chat application is straightforward with the very intuitive user interface.



Welcome to WingSpan, your virtual gateway to the avian world! 🦩

How may I assist you on your feathered journey today?

Here's how I can help:

- **Bird Information:** Looking for detailed facts, habitat info, or conservation status about a specific bird? I'll provide you with all the information you need to become an avian expert.
- **Bird Identification by Description:** Spotted an intriguing bird? Describe its features, behavior, or sounds to me, and I'll help you uncover its identity.
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2. Running the Web application Locally

2.1 Setting Up a Python Environment Using Conda

1. Download and install Anaconda from the Anaconda website, ensuring you select a version that includes Conda.
2. Open Anaconda Prompt:
    - Launch from the Start Menu (Windows) or terminal (macOS and Linux).
3. Create a New Conda Environment with the runtime python version for the application:
    - Command: ***conda create -n wingspan python=3.11.7***
4. Activate the Conda Environment:
    - Command**: *conda activate wingspan***

2.2 Django Web Application Local Set up

1. Clone the below GitHub repository to your local machine.
   https://github.com/jithinkrn/IRS-PM-2024-05-05-IS06PT-WingSpan.git

   Command:
   git clone https://github.com/jithinkrn/IRS-PM-2024-05-05-IS06PT-WingSpan.git

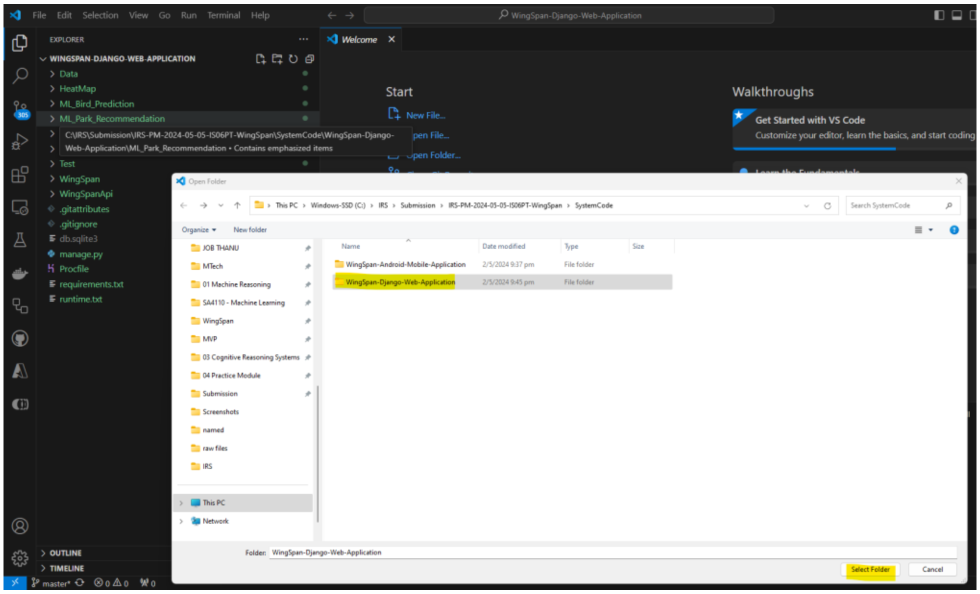
2. Install requirements.txt in your Conda environment created earlier. The requirements.txt file is located at*:*

   *~/IRS-PM-2024-05-05-IS06PT-WingSpan\SystemCode\**WingSpan-Django-Web-Application***

   Command: ***pip install -r requirements.txt***

3. Launch Visual Studio Code and Open the Project Folder “WingSpan-Django-Web-Application” by navigating to below directory in the repo

*~/IRS-PM-2024-05-05-IS06PT-WingSpan\SystemCode\**WingSpan-Django-Web-Application***

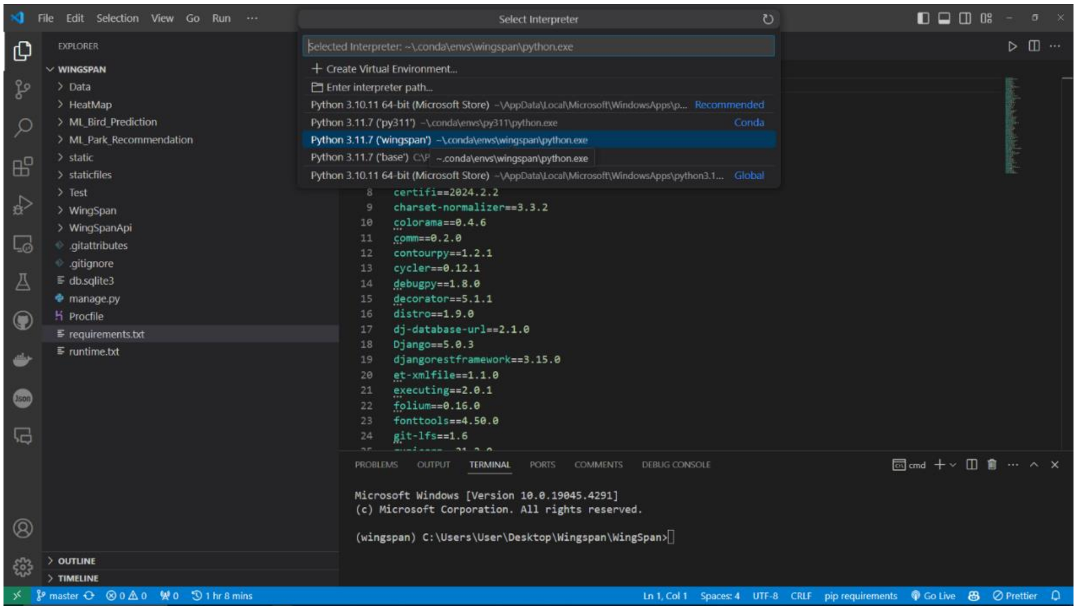


C:\IRS\Submission\IRS-PM-2024-05-05-IS06PT-WingSpan\SystemCode\WingSpan-Django-Web-Application\ML_Park_Recommendation • Contains emphasized items

Name	Date modified	Type	Size
WingSpan-Android-Mobile-Application	2/5/2024 9:37 pm	File folder	
WingSpan-Django-Web-Application	2/5/2024 9:45 pm	File folder	

Folder: WingSpan-Django-Web-Application

4. Selecting the Python Environments in Visual Studio Code
    - Open Command Palette (Ctrl+Shift+P or Cmd+Shift+P).
    - Choose the conda environment created earlier with *python=3.11.7 and all the requirements installed*



Selected Interpreter: ~\.conda\envs\wingspan\python.exe

- + Create Virtual Environment...
- Enter interpreter path...
- Python 3.10.11 64-bit (Microsoft Store) ~\AppData\Local\Microsoft\WindowsApps\p... Recommended
- Python 3.11.7 ('py311') ~\.conda\envs\py311\python.exe Conda
- Python 3.11.7 ('wingspan') ~\.conda\envs\wingspan\python.exe
- Python 3.11.7 ('base') C:\P ~.conda\envs\wingspan\python.exe
- Python 3.10.11 64-bit (Microsoft Store) ~\AppData\Local\Microsoft\WindowsApps\python3.1... Global

```
certifi==2024.2.2
charset-normalizer==3.3.2
colorama==0.4.6
comm==0.2.0
contourpy==1.2.1
cycler==0.12.1
debugpy==1.8.0
decorator==5.1.1
distro==1.9.0
dj-database-url==2.1.0
Django==5.0.3
djangorestframework==3.15.0
et-xmlfile==1.1.0
executing==2.0.1
folium==0.16.0
fonttools==4.50.0
git-lfs==1.6
```

```
Microsoft Windows [Version 10.0.19045.4291]
(c) Microsoft Corporation. All rights reserved.

(wingspan) C:\Users\User\Desktop\Wingspan\WingSpan>
```

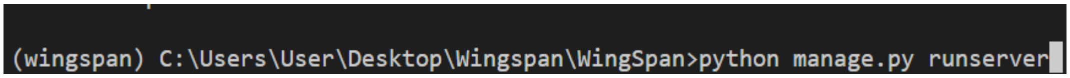
5. Configure Open AI API Key as environment variable (The API key will be uploaded to Canvas with the submission documents in text file). In visual studio menu goto Terminal > New Terminal and enter the command below

   Windows Command:
   Run: *setx OPENAI_API_KEY "PROVIDED_API_KEY_HERE"*

   Linux Command:
   export OPENAI_API_KEY “PROVIDED_API_KEY_HERE ":~/bin

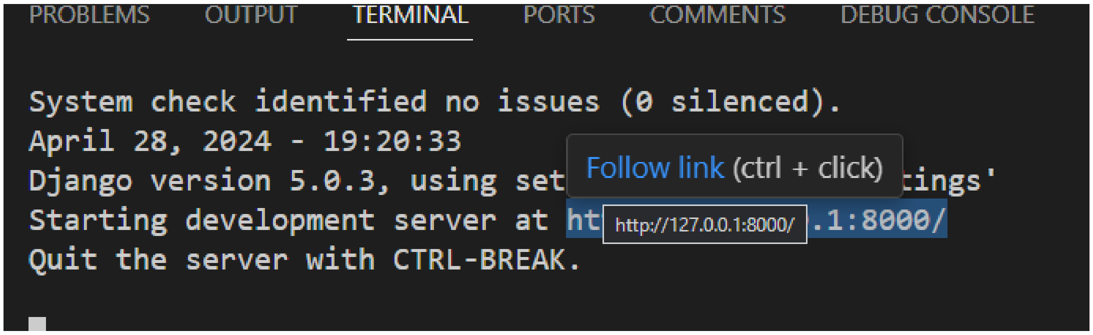
6. In the VS code terminal, enter the following command.

   python manage.py runserver

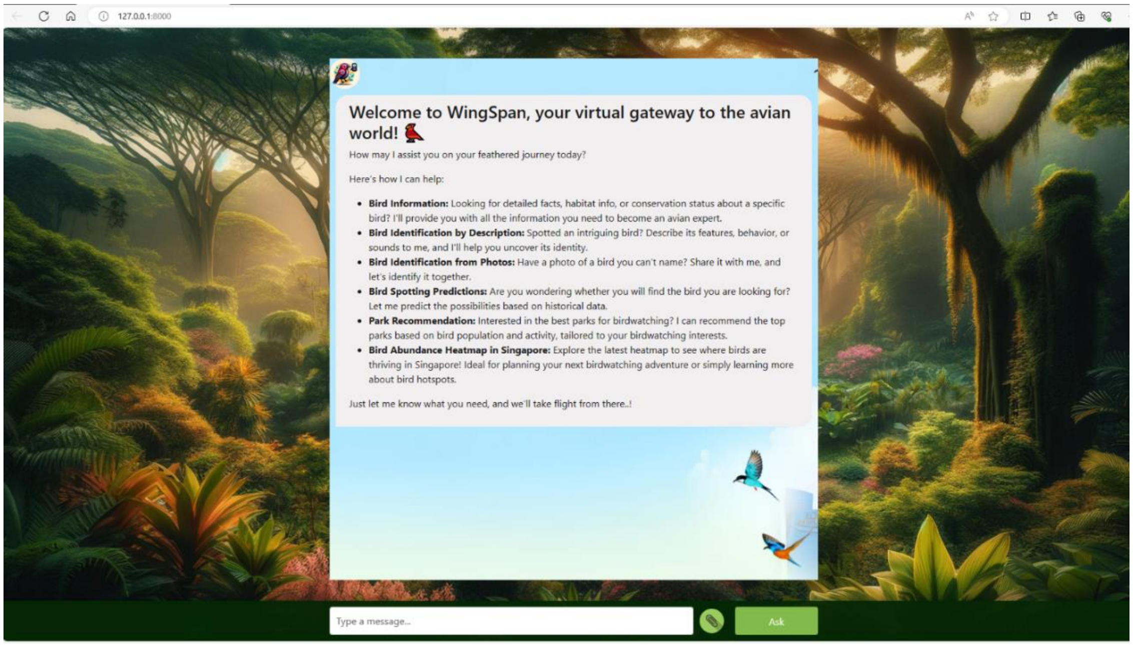


```
(wingspan) C:\Users\User\Desktop\Wingspan\WingSpan>python manage.py runserver
```

Once the server runs. It will display the local host link. Open browser and navigate to http://127.0.0.1:8000/ to view the application.



```
System check identified no issues (0 silenced).
April 28, 2024 - 19:20:33
Django version 5.0.3, using set                  tings'
Starting development server at ht              .1:8000/
Quit the server with CTRL-BREAK.
```



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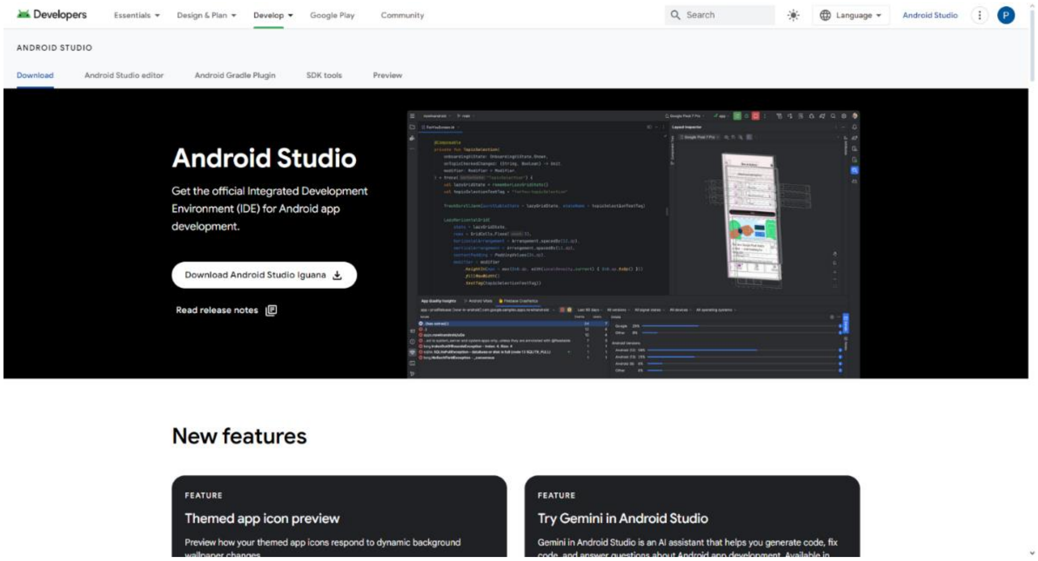
If the OPEN AI Key and other requirement setups are correct, you should be able to, chat with application.

7. To stop the server, you can press CTRL+C in the terminal.

3. Running the WingSpan Android Mobile Application Locally

3.1 Android Studio Setup.

- Download Android Studio from the below URL https://developer.android.com/studio?_gl=1*datbhy*_up*MQ..&gclid=CjwKCAjw88yxBhBWEiwA7cm6pb48LLsVpv1FA3886J7c_aptlXltuuFvBTcGujgREyaP5LpL7-NXlxoCjMUQAvD_BwE&gclsrc=aw.ds



Android Studio

Get the official Integrated Development Environment (IDE) for Android app development.

New features

FEATURE

Themed app icon preview

Preview how your themed app icons respond to dynamic background wallpaper changes

FEATURE

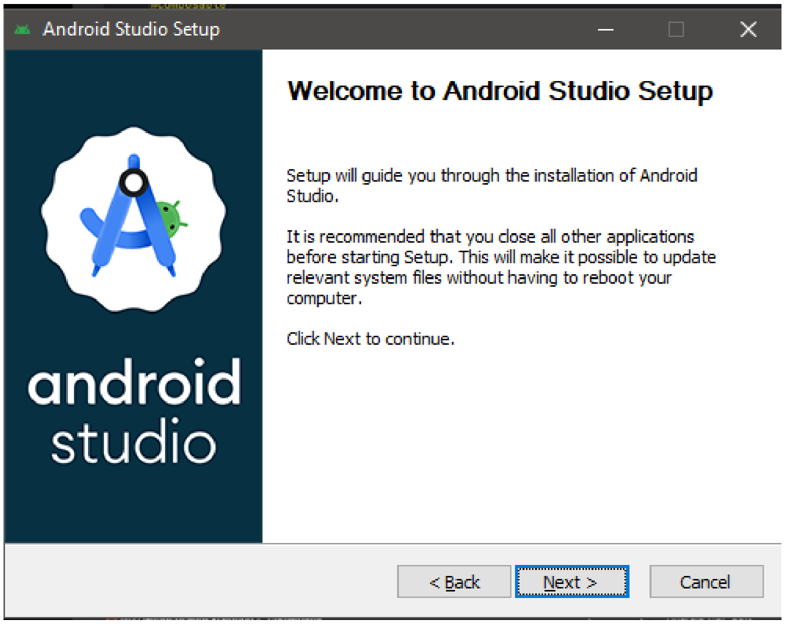
Try Gemini in Android Studio

Gemini in Android Studio is an AI assistant that helps you generate code, fix code, and answer questions about Android app development. Available in

- Ensure your system meets the installation requirements.
-

3.2 Installing Android Studio

Follow the on-screen instructions to install Android Studio. This typically includes selecting an installation directory, choosing components to install, and configuring initial settings like memory allocations.

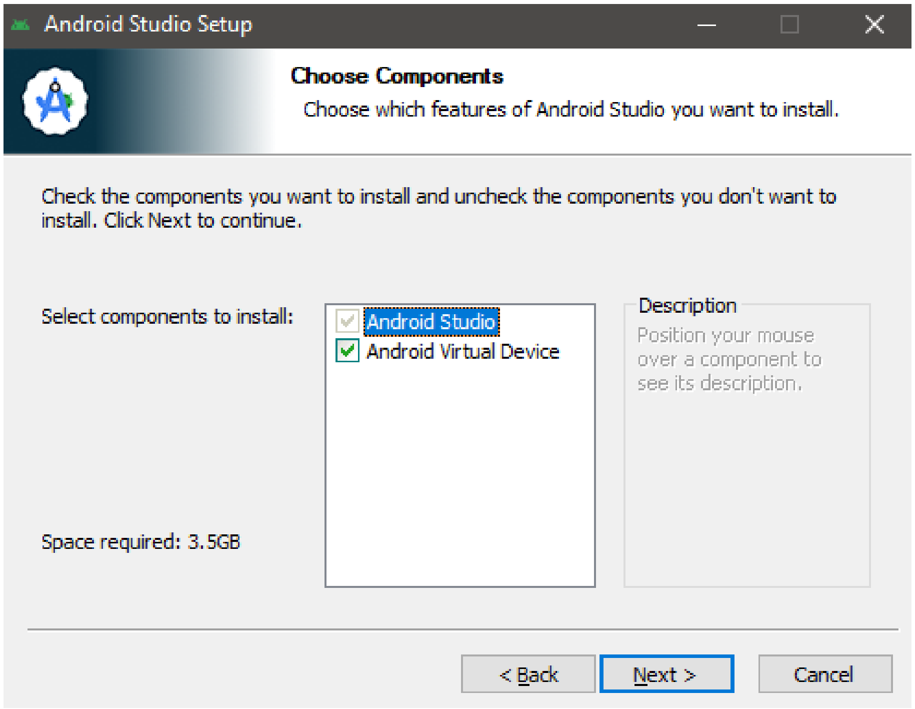


Welcome to Android Studio Setup

Setup will guide you through the installation of Android Studio.

It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.

Click Next to continue.



Android Studio Setup

Choose Components

Choose which features of Android Studio you want to install.

Check the components you want to install and uncheck the components you don't want to install. Click Next to continue.

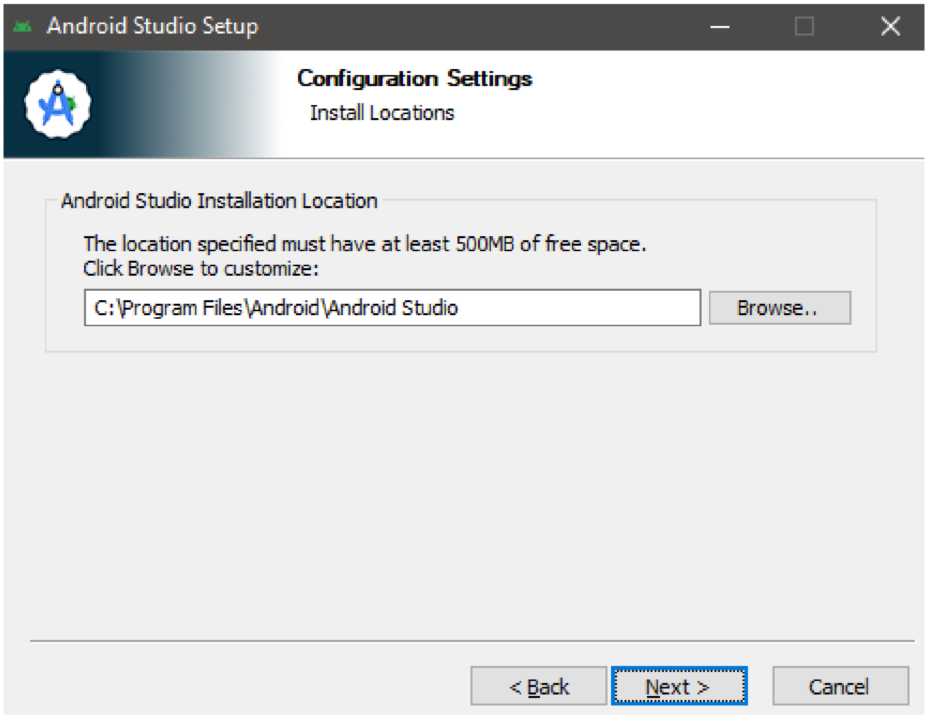
Select components to install:

☑ Android Studio
☑ Android Virtual Device

Space required: 3.5GB

Description

Position your mouse over a component to see its description.



Android Studio Setup

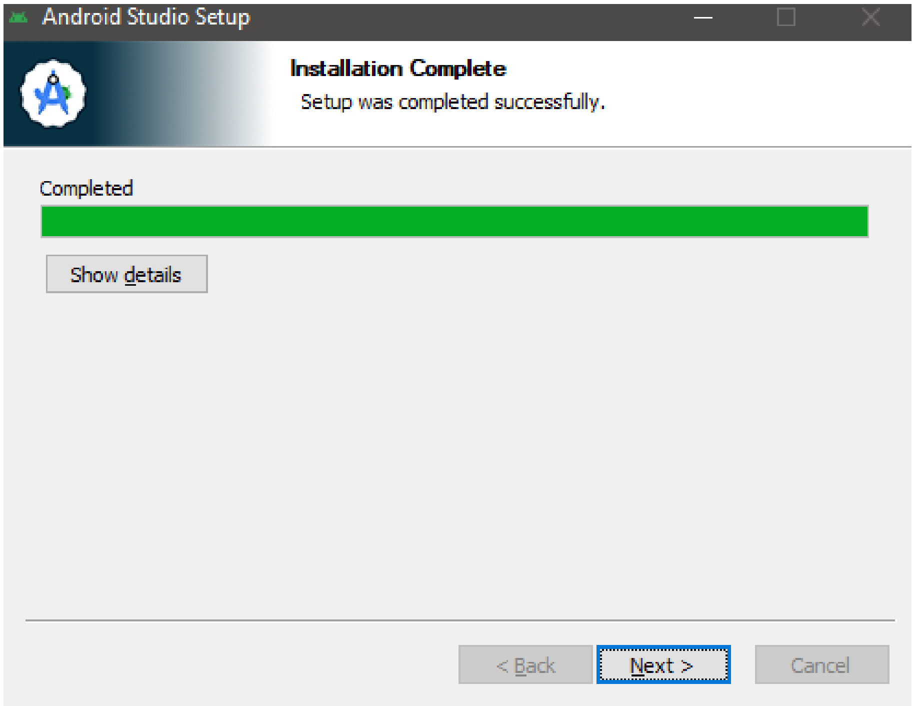
Configuration Settings

Install Locations

Android Studio Installation Location

The location specified must have at least 500MB of free space.
Click Browse to customize:

C:\Program Files\Android\Android Studio

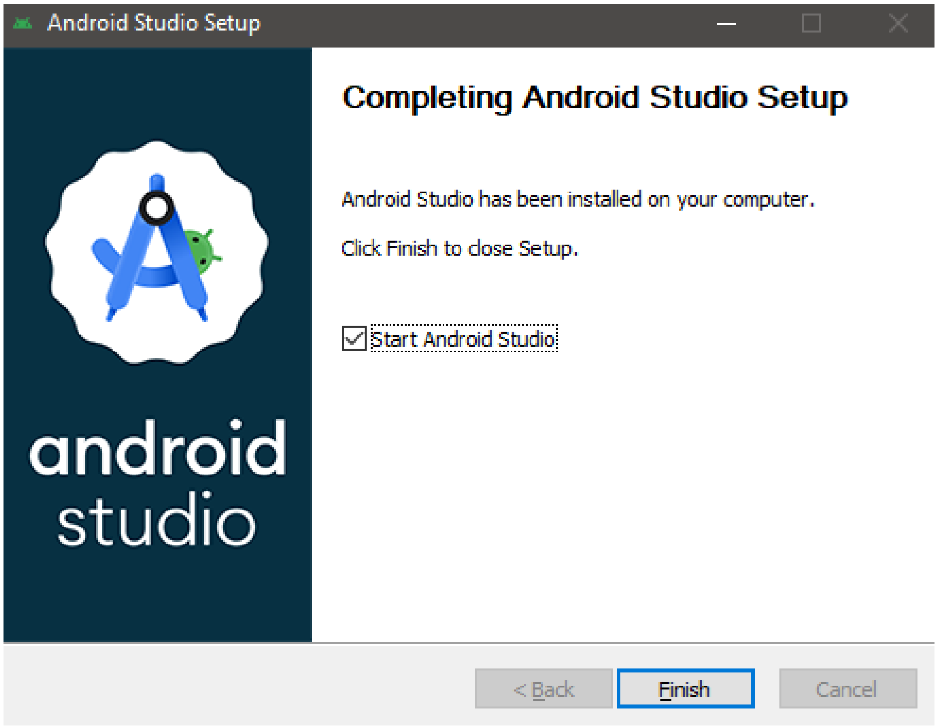


Android Studio Setup

Installation Complete

Setup was completed successfully.

Completed



Android Studio Setup

Completing Android Studio Setup

Android Studio has been installed on your computer.

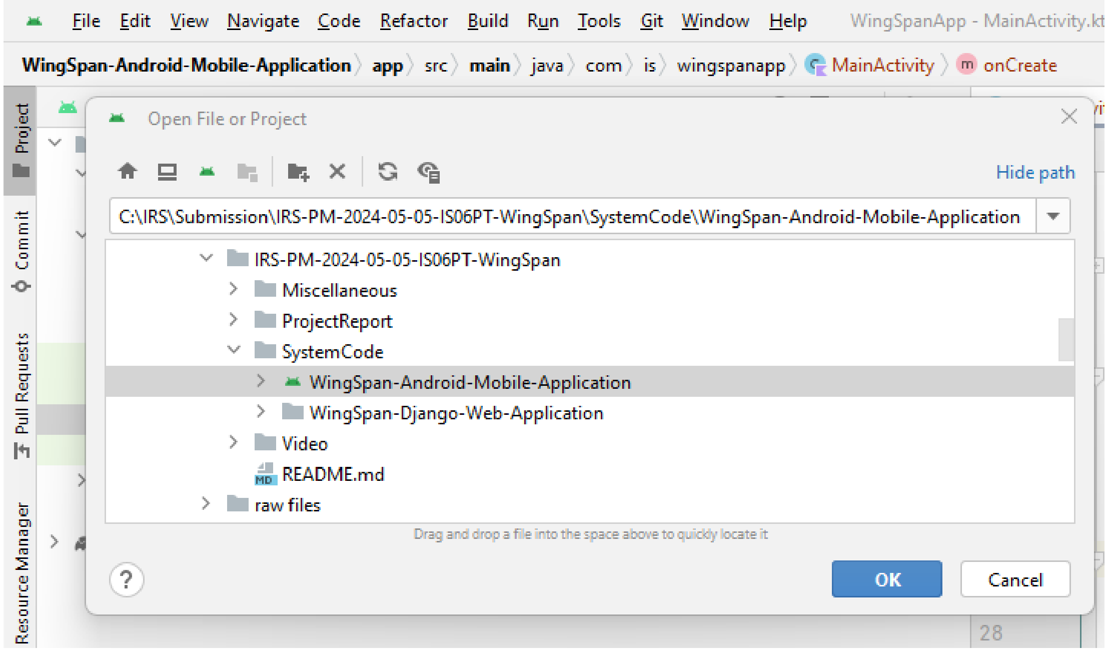
Click Finish to close Setup.

☑ Start Android Studio

3.4 Opening the Project

Launch Android Studio and open the **WingSpan-Android-Mobile-Application** project with Android Studio.

Location:
*~/IRS-PM-2024-05-05-IS06PT-WingSpan\SystemCode\**WingSpan-Android-Mobile-Application***

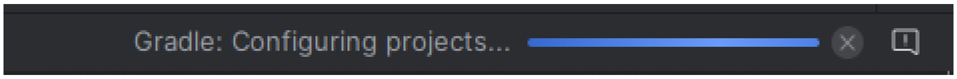

File Edit View Navigate Code Refactor Build Run Tools Git Window Help
WingSpanApp - MainActivity.kt
WingSpan-Android-Mobile-Application 〉 app 〉 src 〉 main 〉 java 〉 com 〉 is 〉 wingspanapp 〉 MainActivity 〉 onCreate
Project
Commit
Pull Requests
Resource Manager
Open File or Project
Hide path
Drag and drop a file into the space above to quickly locate it
?
OK
Cancel
28

C:\IRS\Submission\IRS-PM-2024-05-05-IS06PT-WingSpan\SystemCode\WingSpan-Android-Mobile-Application

```
IRS-PM-2024-05-05-IS06PT-WingSpan
    Miscellaneous
    ProjectReport
    SystemCode
        WingSpan-Android-Mobile-Application
        WingSpan-Django-Web-Application
    Video
    README.md
raw files
```

3.5 Gradle Build and Project Configuration

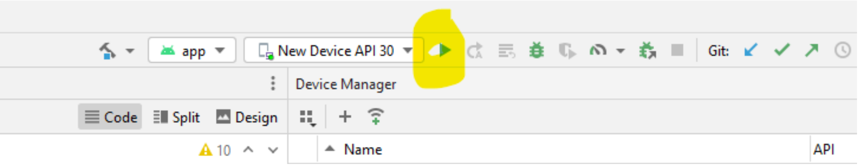
- Allow Android Studio to complete the Gradle build.



Gradle: Configuring projects...

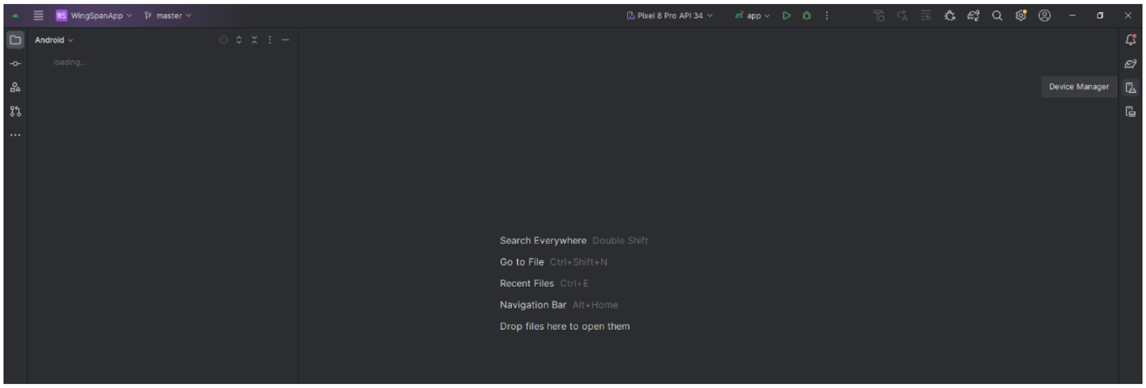
3.6 Running the application

Once the build is completed click the run Button from the menu.

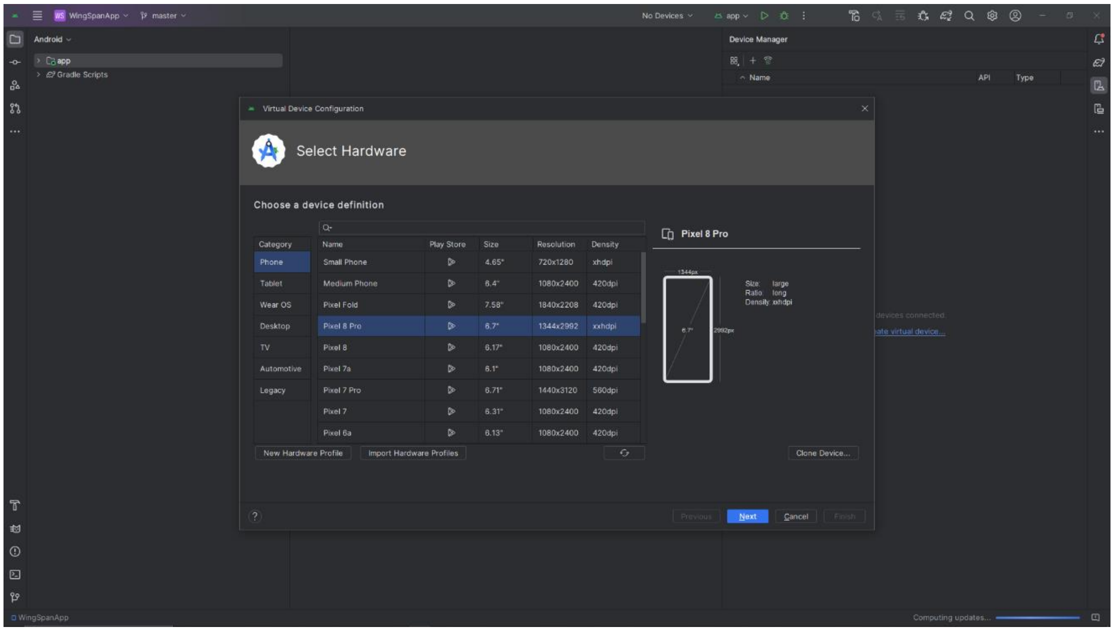


3.7 Additional Information: Setting Up and Running an Android Emulator in Android Studio

One the right panel click the Device Manager button.



- Use the AVD Manager to create a virtual device (e.g., Pixel 4). Choose a device definition from the list of hardware profiles (e.g., Pixel 4) that matches the type of device you want to emulate. Click "Next" to continue.



Choose a device definition

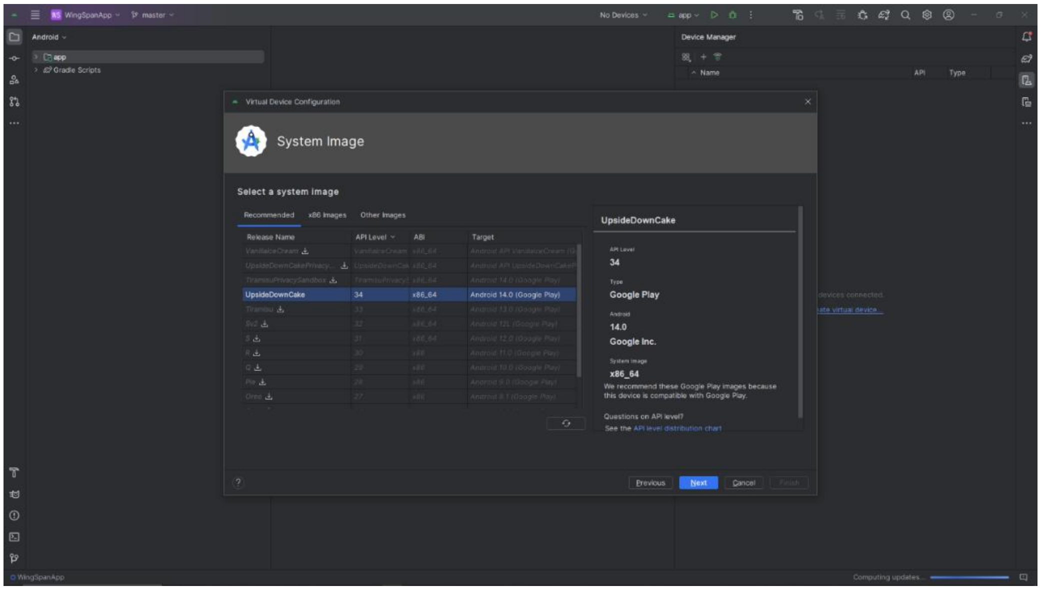
Category	Name	Play Store	Size	Resolution	Density
Phone	Small Phone	▷	4.65"	720x1280	xhdpi
Tablet	Medium Phone	▷	6.4"	1080x2400	420dpi
Wear OS	Pixel Fold	▷	7.58"	1840x2208	420dpi
Desktop	Pixel 8 Pro	▷	6.7"	1344x2992	xxhdpi
TV	Pixel 8	▷	6.17"	1080x2400	420dpi
Automotive	Pixel 7a	▷	6.1"	1080x2400	420dpi
Legacy	Pixel 7 Pro	▷	6.71"	1440x3120	560dpi
	Pixel 7	▷	6.31"	1080x2400	420dpi
	Pixel 6a	▷	6.13"	1080x2400	420dpi

Pixel 8 Pro

Size: large
Ratio: long
Density: xxhdpi

- Select a System Image. Download and select a system image. On the next screen, select a system image for your AVD. You will need to download a system image if you have not already. Choose an image with the desired API level and

Google Play services if you need them for your development. Click "Download" next to the system image if it is not already available on your system. After the download is completed, select the system image, and click "Next".



Virtual Device Configuration

System Image

Select a system image

Recommended | x86 Images | Other Images

Release Name	API Level	ABI	Target
VanillaIceCream	VanillaIceCream	x86_64	Android API VanillaIceCream (G
UpsideDownCakePrivacy...	UpsideDownCak	x86_64	Android API UpsideDownCakeP
TiramisuPrivacySandbox	TiramisuPrivacyS	x86_64	Android 14.0 (Google Play)
UpsideDownCake	34	x86_64	Android 14.0 (Google Play)
Tiramisu	33	x86_64	Android 13.0 (Google Play)
Sv2	32	x86_64	Android 12L (Google Play)
S	31	x86_64	Android 12.0 (Google Play)
R	30	x86	Android 11.0 (Google Play)
Q	29	x86	Android 10.0 (Google Play)
Pie	28	x86	Android 9.0 (Google Play)
Oreo	27	x86	Android 8.1 (Google Play)

UpsideDownCake

API Level
34

Type
Google Play

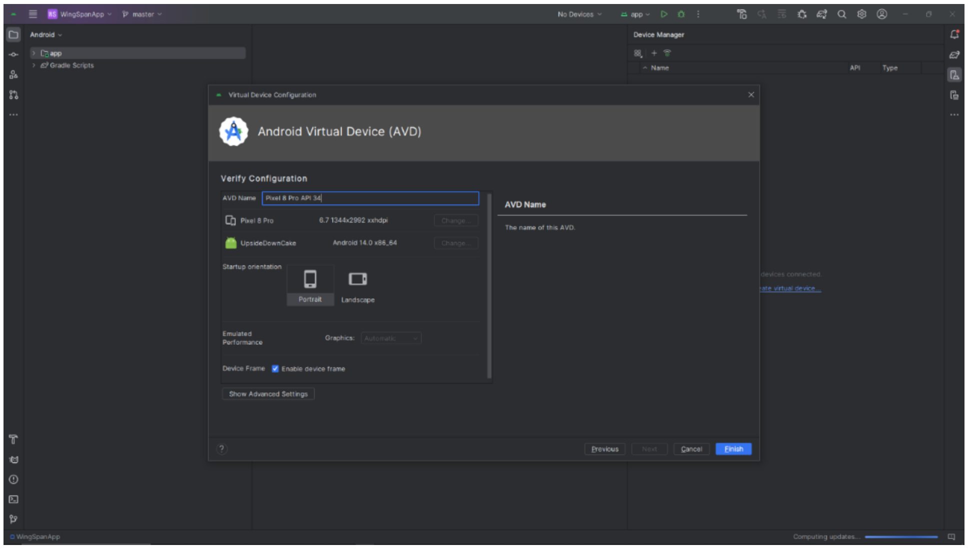
Android
14.0
Google Inc.

System image
x86_64

We recommend these Google Play images because this device is compatible with Google Play.

Questions on API level?
See the API level distribution chart

- Finish and Create AVD. Click "Finish" to create your Android Virtual Device.



Virtual Device Configuration

Android Virtual Device (AVD)

Verify Configuration

AVD Name: Pixel 8 Pro API 34

Pixel 8 Pro — 6.7 1344x2992 xxhdpi

UpsideDownCake — Android 14.0 x86_64

Startup orientation: Portrait / Landscape

Emulated Performance — Graphics: Automatic

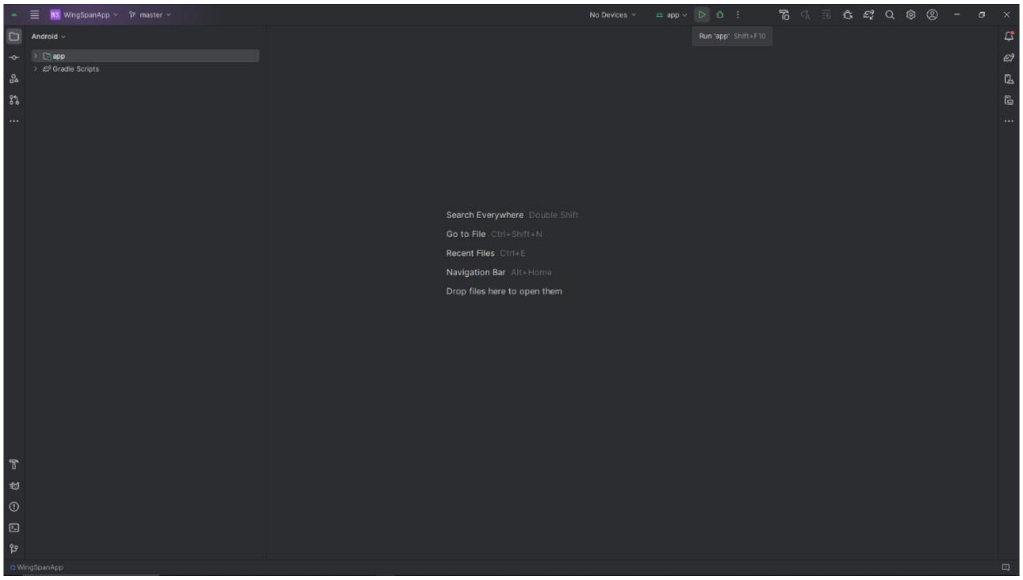
Device Frame: ☑ Enable device frame

AVD Name

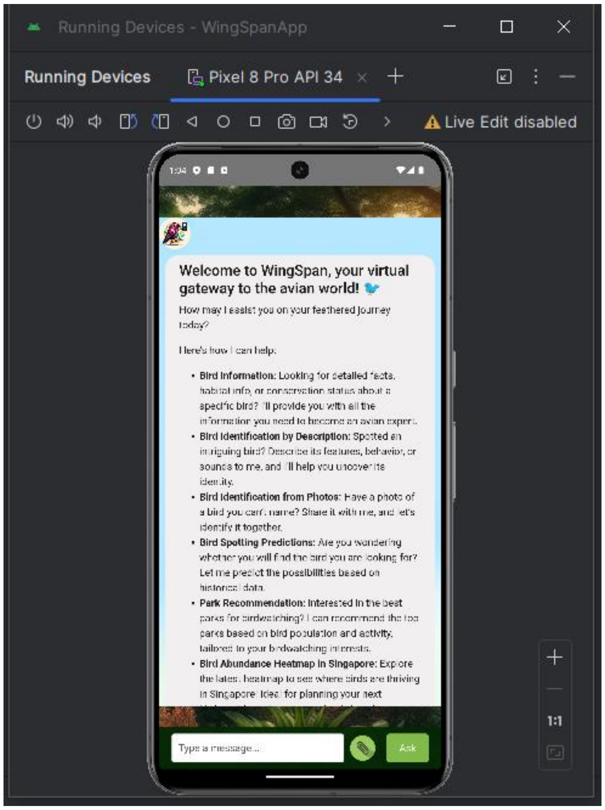
The name of this AVD.

- Run the Application on the Emulator:Launch the emulator and wait for it to boot. From the AVD Manager, find the virtual device you created and click on the "Play" button to launch the emulator. Wait for the emulator to start and load the

Android operating system. This can take a few minutes depending on your computer's specifications.



- Interact with the application on the emulator.



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