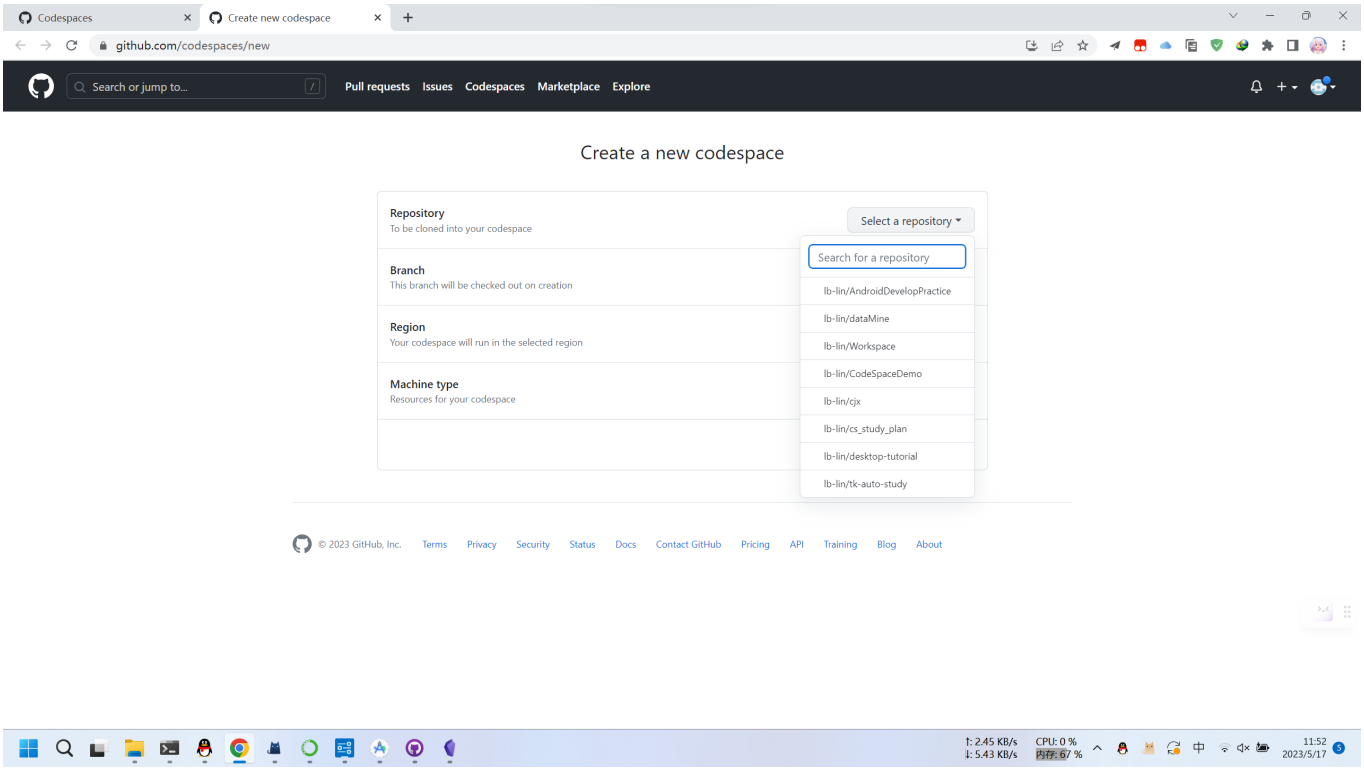
Github Codespace的TensorFlow环境安装

创建一个新的Codespace

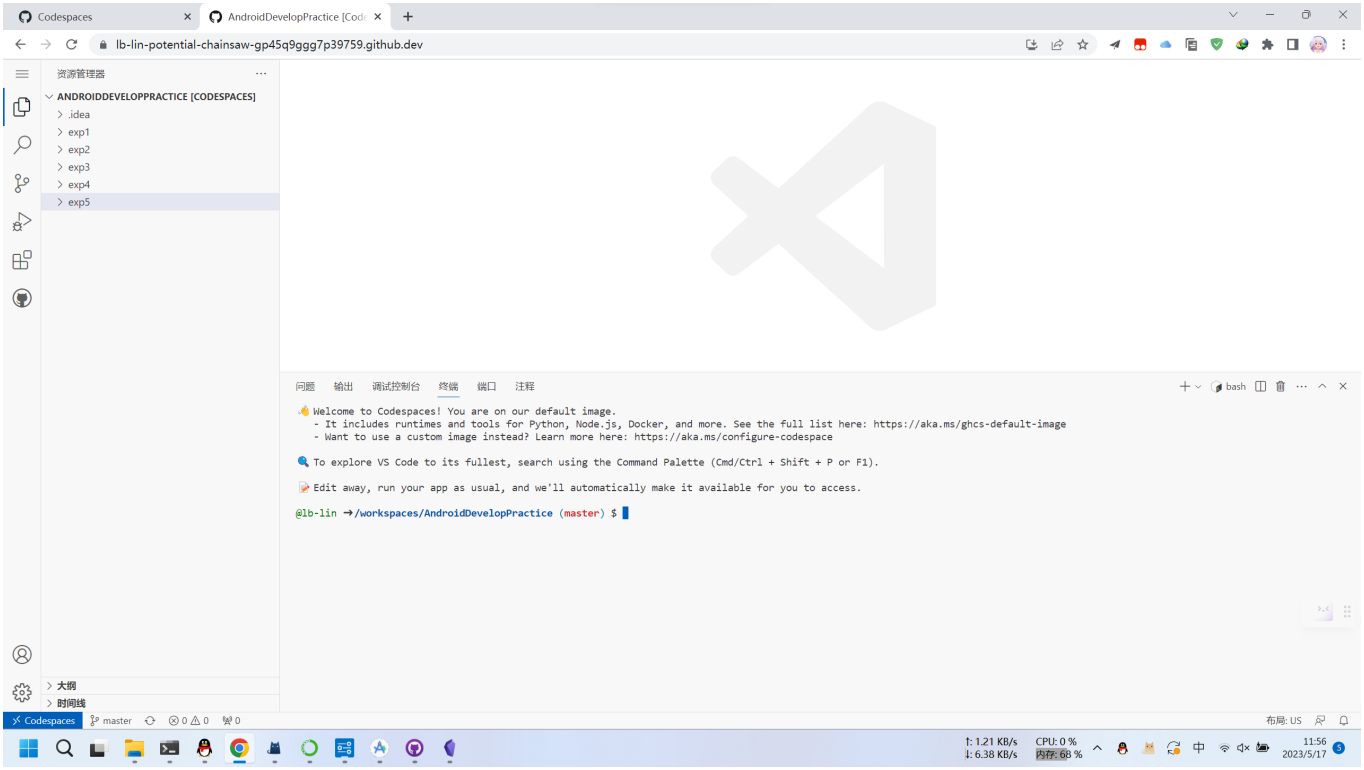
需求：

- 具备能访问Github的环境
- 最好完成Github Education认证，能提高CodeSpace空间和处理器限额

Codespace链接 Codespace，打开后点击右上角的New Codespace按钮
创建时选择一个仓库，它会被克隆到你的新CodeSpace，建议选择之前的作业仓库



MachineType建议选择高配，后续要下载内容的不少
创建完成后会进入如下界面：



界面和VsCode完全一样，毕竟VSCode就是基于Electron的，搬到浏览器非常方便，**如果你不愿意在浏览器操作，也可以利用本机的VSCode的CodeSpace插件链接到CodeSpace操作（回到一开始的Codespace界面，在你新建的Codespace右边的三个点，openin可以选择不同的打开方式）。**

下面在终端操作，需要通过Conda创建一个Python3.8的虚拟环境并安装TensorFlow Lite Maker相关的库

创建虚拟环境

通过Conda创建一个新的Python3.8的环境，这里我将其命名为tf(-n 后跟上你想要的虚拟环境名字)

```
conda create -n tf python=3.8
```

按下Y回车确认安装

激活我们新建的tf虚拟环境

```
conda activate tf
```

看到命令行前面的括号里是我们新建的虚拟环境名字即可

```
(base) @lb-lin ➜ /workspaces/AndroidDevelopPractice (master) $ conda activate tf
(tf) @lb-lin ➜ /workspaces/AndroidDevelopPractice (master) $
```

通过python --version查看版本，已经是Python3.8了

```
python --version
```

```
(tf) @lb-lin ➜/workspaces/AndroidDevelopPractice (master) $ python --version
Python 3.8.16
```

在这个新的Conda环境安装tflite-model-maker相关的包

```
pip install tflite-model-maker
```

开始安装，这可能会耗费较长时间：

```
问题  输出  调试控制台  终端  端口  注释

(tf) @lb-lin ➜/workspaces/AndroidDevelopPractice (master) $ pip install tflite-model-maker
Collecting tflite-model-maker
  Downloading tflite_model_maker-0.4.2-py3-none-any.whl (577 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 577.3/577.3 kB 17.8 MB/s eta 0:00:00
Collecting neural-structured-learning>=1.3.1
  Downloading neural_structured_learning-1.4.0-py2.py3-none-any.whl (128 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 128.6/128.6 kB 6.6 MB/s eta 0:00:00
Collecting sentencepiece>=0.1.91
  Downloading sentencepiece-0.1.99-cp38-cp38-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (1.3 MB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 1.3/1.3 MB 31.7 MB/s eta 0:00:00
Collecting absl-py>=0.10.0
  Downloading absl_py-1.4.0-py3-none-any.whl (126 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 126.5/126.5 kB 7.1 MB/s eta 0:00:00
Collecting pillow>=7.0.0
  Downloading Pillow-9.5.0-cp38-cp38-manylinux_2_28_x86_64.whl (3.4 MB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 3.4/3.4 MB 55.4 MB/s eta 0:00:00
Collecting tensorflow-hub<0.13,>=0.7.0
  Downloading tensorflow_hub-0.12.0-py2.py3-none-any.whl (108 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 108.8/108.8 kB 5.8 MB/s eta 0:00:00
Collecting tensorflow-addons>=0.11.2
  Downloading tensorflow_addons-0.20.0-cp38-cp38-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (591 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 591.0/591.0 kB 22.0 MB/s eta 0:00:00
Collecting urllib3!=1.25.0,!=1.25.1,<1.26,>=1.21.1
  Downloading urllib3-1.25.11-py2.py3-none-any.whl (127 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 128.0/128.0 kB 7.5 MB/s eta 0:00:00
Collecting scann==1.2.6
  Downloading scann-1.2.6-cp38-cp38-manylinux2014_x86_64.whl (10.9 MB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 10.9/10.9 MB 71.2 MB/s eta 0:00:00
Collecting lxml>=4.6.1
  Downloading lxml-4.9.2-cp38-cp38-manylinux_2_17_x86_64.manylinux2014_x86_64.manylinux_2_24_x86_64.whl (7.1 MB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 7.1/7.1 MB 69.6 MB/s eta 0:00:00
Collecting PyYAML>=5.1
  Downloading PyYAML-6.0-cp38-cp38-manylinux_2_5_x86_64.manylinux1_x86_64.manylinux_2_12_x86_64.manylinux2010_x86_64.whl (701 kB)
```

如果顺利的话应该会很快安装完成（这里我只用了几秒，但也有可能会下载很多包，等待较长时间），安装完成后终端显示如下界面，可以继续开始教程后续的操作了

```
问题  输出  调试控制台  终端  端口  注释

  Downloading grpcio_status-1.49.1-py3-none-any.whl (14 kB)
  Downloading grpcio_status-1.48.2-py3-none-any.whl (14 kB)
Collecting pyasn1<0.6.0,>=0.4.6
  Downloading pyasn1-0.5.0-py2.py3-none-any.whl (83 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 83.9/83.9 kB 4.6 MB/s eta 0:00:00
Collecting oauthlib>=3.0.0
  Downloading oauthlib-3.2.2-py3-none-any.whl (151 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 151.7/151.7 kB 7.7 MB/s eta 0:00:00
Building wheels for collected packages: fire, audioread, kaggle, promise
  Building wheel for fire (setup.py) ... done
  Created wheel for fire: filename=fire-0.5.0-py2.py3-none-any.whl size=116931 sha256=b58c7671f744e6e3f81f9e9b36d366ac1b1f815dcc06ce999c456e56ad8f4a8c
  Stored in directory: /home/codespace/.cache/pip/wheels/5b/eb/43/7295e71293b218ddfd627f935229bf54af9018add7fbb5aac6
  Building wheel for audioread (setup.py) ... done
  Created wheel for audioread: filename=audioread-3.0.0-py3-none-any.whl size=23704 sha256=f422d1e6db94b0336c52168bf28e0d42ba67c8d18bc07f57f33aee6dba906c98
  Stored in directory: /home/codespace/.cache/pip/wheels/0a/ed/be/49df2538fca496690a024a4374455584d65c2afd6fc3d6e9c7
  Building wheel for kaggle (setup.py) ... done
  Created wheel for kaggle: filename=kaggle-1.5.13-py3-none-any.whl size=77716 sha256=7fcccbf10e58693f529cf5a2a02cdd069acd5decfafbc259b9ebac0e20be9c19
  Stored in directory: /home/codespace/.cache/pip/wheels/e6/8e/67/e07554a720a493dc6b39b30488590ba92ed45448ad0134d253
  Building wheel for promise (setup.py) ... done
  Created wheel for promise: filename=promise-2.3-py3-none-any.whl size=21486 sha256=376cde20f0cb2ca4893150fb36d9fa4abb6b89e847f9bfd7bf8cb87480c417e4
  Stored in directory: /home/codespace/.cache/pip/wheels/54/aa/01/724885182f93150035a2a91bce34a12877e8067a97baaf5dc8
Successfully built fire audioread kaggle promise
Installing collected packages: text-unidecode, tensorflow-estimator, tensorboard-plugin-wit, sentencepiece, pytz, py-cpuinfo, libclang, keras, gin-config, flatbuff
ers, dm-tree, dataclasses, zipp, wrapt, urllib3, uritemplate, tzdata, typing-extensions, typeguard, tqdm, toml, threadpoolctl, termcolor, tensorflow-io-gcs-filesys
tem, tensorboard-data-server, six, PyYAML, python-slugify, pyparsing, pycparser, pybind11, pyasn1, psutil, protobuf, platformdirs, pillow, oauthlib, numpy, MarkupS
afe, lxml, llvmlite, kiwisolver, joblib, idna, grpcio, google-crc32c, gast, etils, decorator, Cython, cycler, click, charset-normalizer, certifi, cachetools, audio
read, attrs, absl-py, werkzeug, tf-slim, tensorflow-model-optimization, tensorflow-hub, scipy, rsa, requests, python-dateutil, pyasn1-modules, proto-plus, promise,
 packaging, opt-einsum, opencv-python-headless, numba, keras-preprocessing, importlib-resources, importlib-metadata, httplib2, h5py, googleapis-common-protos, goog
le-resumable-media, google-pasta, fire, CFFI, astunparse, tensorflow-metadata, tensorflow-addons, soundfile, sounddevice, scikit-learn, resampy, requests-oauthlib,
 pooch, pandas, neural-structured-learning, matplotlib, markdown, kaggle, grpcio-status, google-auth, tflite-support, librosa, google-auth-oauthlib, google-auth-ht
tplib2, google-api-core, array-record, tensorflow-datasets, tensorboard, google-cloud-core, google-api-python-client, tensorflow, google-cloud-bigquery, tf-models-
official, tensorflowjs, scann, tflite-model-maker
```

后续在JupyterNotebook实验时记得**选择内核-Python Environment-选择我们新建的环境**即可，

如果提示需要安装Python和Jupyter插件，按照提示安装即可