

CARA MENJALANKAN PROGRAM

1. Buka environmental tempat menampung libraries dan pekerjaan untuk penelitian.

```
● PS D:\SKRIPSI\GVR> & d:/SKRIPSI/GVR/.venv/Scripts/Activate.ps1
● (.venv) PS D:\SKRIPSI\GVR> dir

Directory: D:\SKRIPSI\GVR

Mode                LastWriteTime         Length Name
----                -
d-----            7/23/2024 10:37 AM             .venv
d-----            7/22/2024 10:45 PM             dataset
d-----            9/5/2024 12:54 AM             DataUji
d-----            7/31/2024  1:50 PM             Gender_Voice_Recognition
d-----            7/28/2024 11:01 PM             MFCC_Features
d-----            8/27/2024 10:43 AM             MFCC_Features_X_Normalization
d-----            9/5/2024  9:28 AM             Model
-a-----            9/5/2024 12:58 AM             1149 check_shape.ipynb
-a-----            9/5/2024  9:28 AM             65674 CNN_Model.ipynb
-a-----            9/2/2024  1:34 PM             7006 Convert_Sound.ipynb
-a-----            9/5/2024  1:26 AM             29656 Evaluation_Model.ipynb
-a-----            9/5/2024  1:10 AM             13465 MFCC.ipynb
-a-----            8/29/2024  3:08 PM             146221 sample_mfcc.ipynb

○ (.venv) PS D:\SKRIPSI\GVR> █
```

2. Setelah environment aktif, masuk ke direktori tempat file aplikasi web berada.

```
● (.venv) PS D:\SKRIPSI\GVR> cd .\Gender_Voice_Recognition\
● (.venv) PS D:\SKRIPSI\GVR\Gender_Voice_Recognition> dir

Directory: D:\SKRIPSI\GVR\Gender_Voice_Recognition

Mode                LastWriteTime         Length Name
----                -
d-----            9/8/2024 11:41 AM             model
d-----            7/31/2024  1:50 PM             static
d-----            9/5/2024  1:52 AM             templates
d-----            9/5/2024  1:32 AM             uploads
-a-----            9/5/2024  9:31 AM             17592 app.py
```

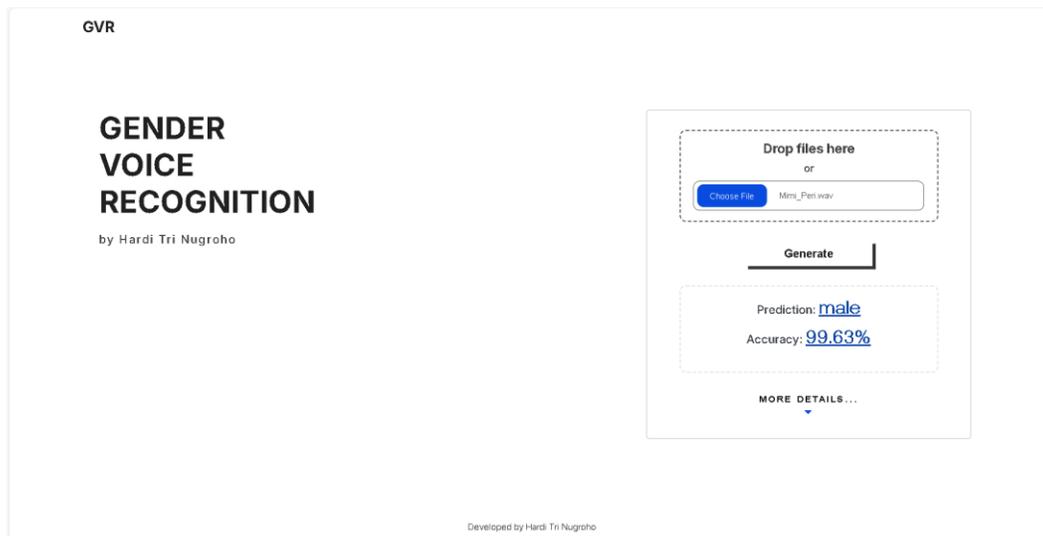
3. Jalankan aplikasi web.

```
(.venv) PS D:\SKRIPSI\GVR\Gender_Voice_Recognition> python .\app.py
2024-09-08 15:27:36.400815: I tensorflow/core/util/port.cc:153] oneDNN custom operations are on. You may see slightly c
tical results due to floating-point round-off errors from different computation orders. To turn them off, set the enviro
le 'TF_ENABLE_ONEDNN_OPTS=0'.
2024-09-08 15:27:39.661162: I tensorflow/core/util/port.cc:153] oneDNN custom operations are on. You may see slightly c
tical results due to floating-point round-off errors from different computation orders. To turn them off, set the enviro
le 'TF_ENABLE_ONEDNN_OPTS=0'.
2024-09-08 15:27:48.686528: I tensorflow/core/platform/cpu_feature_guard.cc:210] This TensorFlow binary is optimized to
e CPU instructions in performance-critical operations.
To enable the following instructions: AVX2 FMA, in other operations, rebuild TensorFlow with the appropriate compiler.
* Serving Flask app 'app'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:5000
Press CTRL+C to quit
```

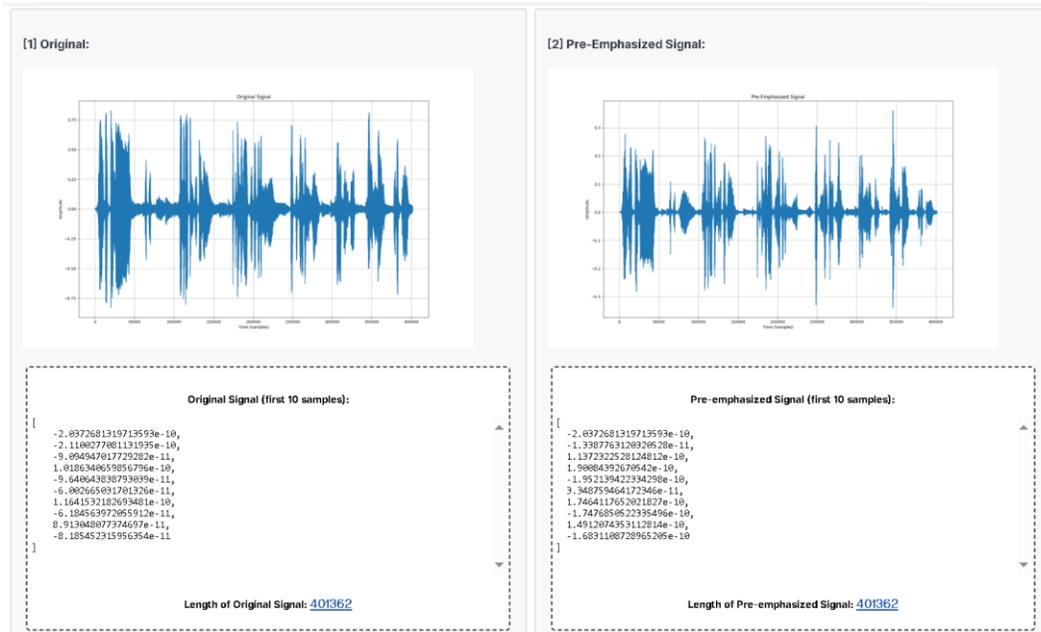
4. Buka alamat local host di browser



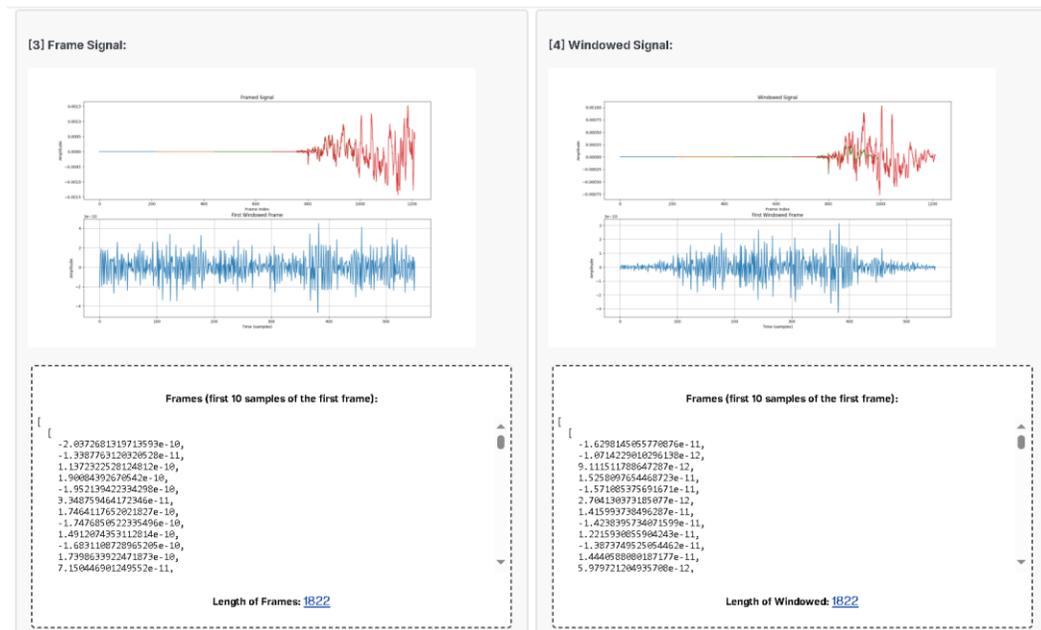
5. Jalankan program kemudian upload audio dengan format .wav



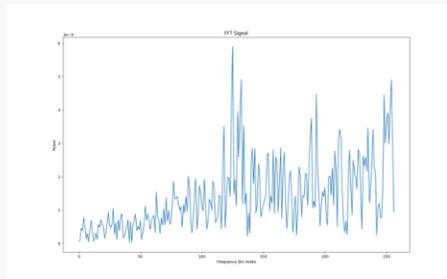
- Kemudian klik generate kemudian akan menampilkan hasil prediksi dan akurasi, serta dapat melihat proses dari ekstraksi fitur dengan menekan “more details...”



- Menampilkan hasil dan proses ekstraksi fitur signal



[5] FFT a Frame:

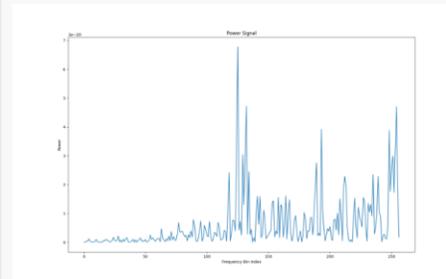


FFT Frames (first 10 samples of the first frame):

```
[
  [
    6.649688357357543e-11,
    8.623115581818116e-11,
    4.556180944376193e-10,
    3.866895645368276e-10,
    7.894885778668513e-10,
    4.6942237582629e-10,
    1.4675747023944621e-10,
    3.6207043055697523e-10,
    4.24139368533123e-11,
    4.6988162537848e-10,
    7.686729530757809e-10,
    3.755286893821886e-10,
  ]
]
```

Length of FFT Frames: [1822](#)

[6] Power Spectrum:

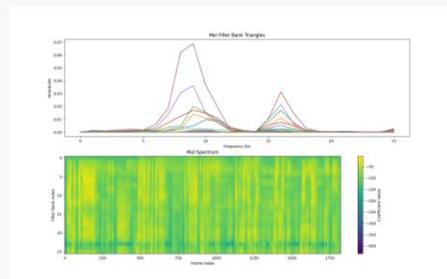


Power Frames (first 10 samples of the first frame):

```
[
  [
    8.6363957599761807e-24,
    1.452387076902234e-23,
    4.054387776434695e-22,
    2.9284832640729527e-22,
    1.188858580262465e-21,
    4.383854889144851e-22,
    4.2865927875206915e-23,
    1.78225348188117950e-22,
    3.513557648789222e-24,
    3.2685112535427904e-22,
    9.585866691934403e-22,
    2.7601939127134408e-22,
  ]
]
```

Length of Power Frames: [1822](#)

[7] Filter Bank Energies:

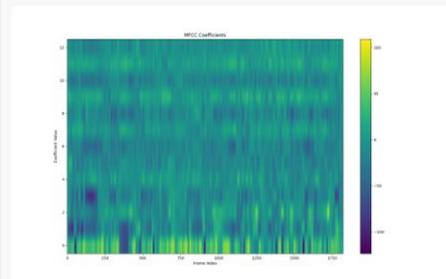


Filter Banks (first 10 samples of the first frame):

```
[
  [
    -433.26126578786676,
    -419.25791338794625,
    -419.0758281123856,
    -423.429558694036,
    -419.6594778438101,
    -427.0608025439387,
    -413.6118516367729,
    -414.46203116894865,
    -409.2198199929266,
    -488.8282764943943,
    -488.8346251323924,
    -412.2852429693694,
  ]
]
```

Length of Filter Banks: [1822](#)

[8] MFCCs:



MFCC (first 10 samples of the first frame):

```
[
  [
    -91.84118081753178,
    8.231919872620566,
    -3.8746346616694604,
    -7.539379383651845,
    2.2488296652082593,
    2.773428722642794,
    -0.275376449653896,
    -2.751048529388794,
    -18.936469979666985,
    -1.4162974618021837,
    -5.3184196813901625,
    -2.9431645883859,
  ]
]
```

Length of MFCC: [1822](#)