Membuat File Aplikasi Mycroft Precise pada Ubuntu 16.04 LTS

Note : Metode pemasangan berlaku umum sehingga dapat diterapkan pada OS
Ubuntu berbagai arsitektur termasuk Ubuntu Arm dan Ubuntu Aarch64

1. Pastikan bahwa terminal sedang berjalan dalam Virtual Environment Python:

2. Buat folder baru:

```
$ mkdir mycroft-precise
$ cd mycroft-precise
```

3. Buat script Python (terlampir):

```
$ nano mycroft-precise.py
```

4. Buat file spec pyinstaller (terlampir):

```
$ nano mycroft-precise.spec
```

5. Build aplikasi Mycroft Precise:

```
$ pyinstaller --clean -y mycroft-precise.spec
```


Perhatikan bahwa hasil build tersimpan pada folder mycroft-precise di dalam folder dist. Salin satu folder mycroft-precise secara utuh untuk dapat menjalankan aplikasi mycroft-precise di dalam folder tersebut.

Script Python Aplikasi Mycroft Precise

```python
from precise_runner import PreciseEngine, PreciseRunner
from subprocess import call
import json
import logging
import sys

waiting = 1

def on_act():
    global waiting
    waiting = 0

def main():
    try:
        # load configuration file
        with open("/data/mycroft-precise.json", "r") as json_file:
            gva_config = json.load(json_file)
            engine_path = gva_config["engine_path"]
            model_path = gva_config["model_path"]
            trigger_level = gva_config["trigger_level"]
            sensitivity = gva_config["sensitivity"]
            command = gva_config["command"]
    except Exception as e:
        logging.error("Error loading mycroft-precise.json: %s", e)
        sys.exit(-1)

    try:
        # initiate precise engine with mycroft model
        engine = PreciseEngine(engine_path, model_path)

        # initiate precise runner that will listen, predict, and detect wakeword
        runner = PreciseRunner(engine,
                               on_activation=on_act,
                               trigger_level=trigger_level,
                               sensitivity=sensitivity)

        # start runner
        runner.start()
    except Exception as e:
        logging.error("Wake Word Engine Error: %s", e)
        sys.exit(-1)

    # keep main thread active until user interrupt
    try:
        wait_for_user_trigger = True
        global waiting
        while True:
            if wait_for_user_trigger:
                logging.info("Waiting Wake Word")
                while waiting == 1:
                    pass
            if not command:
                logging.info("Wake Word Detected")
            else:
                call(command)
            waiting = 1
    except Exception as e:
        runner.stop()
        logging.error("Mycroft Precise Error: %s", e)
        sys.exit(-1)

if __name__ == "__main__":
    main()
```

Perhatikan bahwa '/data/mycroft-precise.json' adalah letak file konfigurasi.

File Spec PyInstaller Aplikasi Mycroft Precise

```python
# -*- mode: python ; coding: utf-8 -*-

block_cipher = None

a = Analysis(['mycroft-precise.py'],
             pathex=['.'],
             binaries=[('/usr/lib/x86_64-linux-gnu/libxcb.so.1','.')],
             datas=[],
             hiddenimports=['_portaudio'],
             hookspath=[],
             runtime_hooks=[],
             excludes=[],
             win_no_prefer_redirects=False,
             win_private_assemblies=False,
             cipher=block_cipher,
             noarchive=False)
pyz = PYZ(a.pure, a.zipped_data,
             cipher=block_cipher)
exe = EXE(pyz,
          a.scripts,
          [],
          exclude_binaries=True,
          name='mycroft-precise',
          debug=False,
          bootloader_ignore_signals=False,
          strip=False,
          upx=True,
          console=True )
coll = COLLECT(exe,
               a.binaries,
               a.zipfiles,
               a.datas,
               strip=False,
               upx=True,
               upx_exclude=[],
               name='mycroft-precise')
```

Perhatikan bahwa letak file '/usr/lib/x86_64-linux-gnu/libxcb.so.1' akan berbeda untuk arsitektur sistem yang berbeda, yaitu:
- Ubuntu Desktop (x86_64)   : '/usr/lib/x86_64-linux-gnu/libxcb.so.1'
- Ubuntu Arm (ARM 32)   : '/usr/lib/arm-linux-gnueabihf/libxcb.so.1'
- Ubuntu Aarch64 (ARM 64)   : '/usr/lib/aarch64-linux-gnu/libxcb.so.1'