

# Candra Kurniawan Mentoring 1 - Machine Learning Process

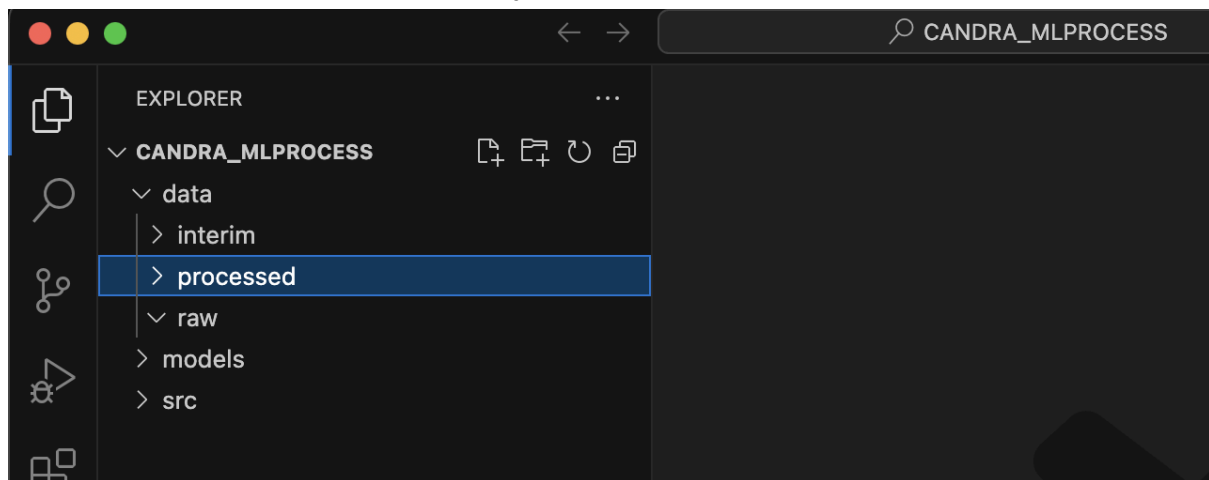
Job Preparation Program, Data Science, Pacmann AI

## Catatan:

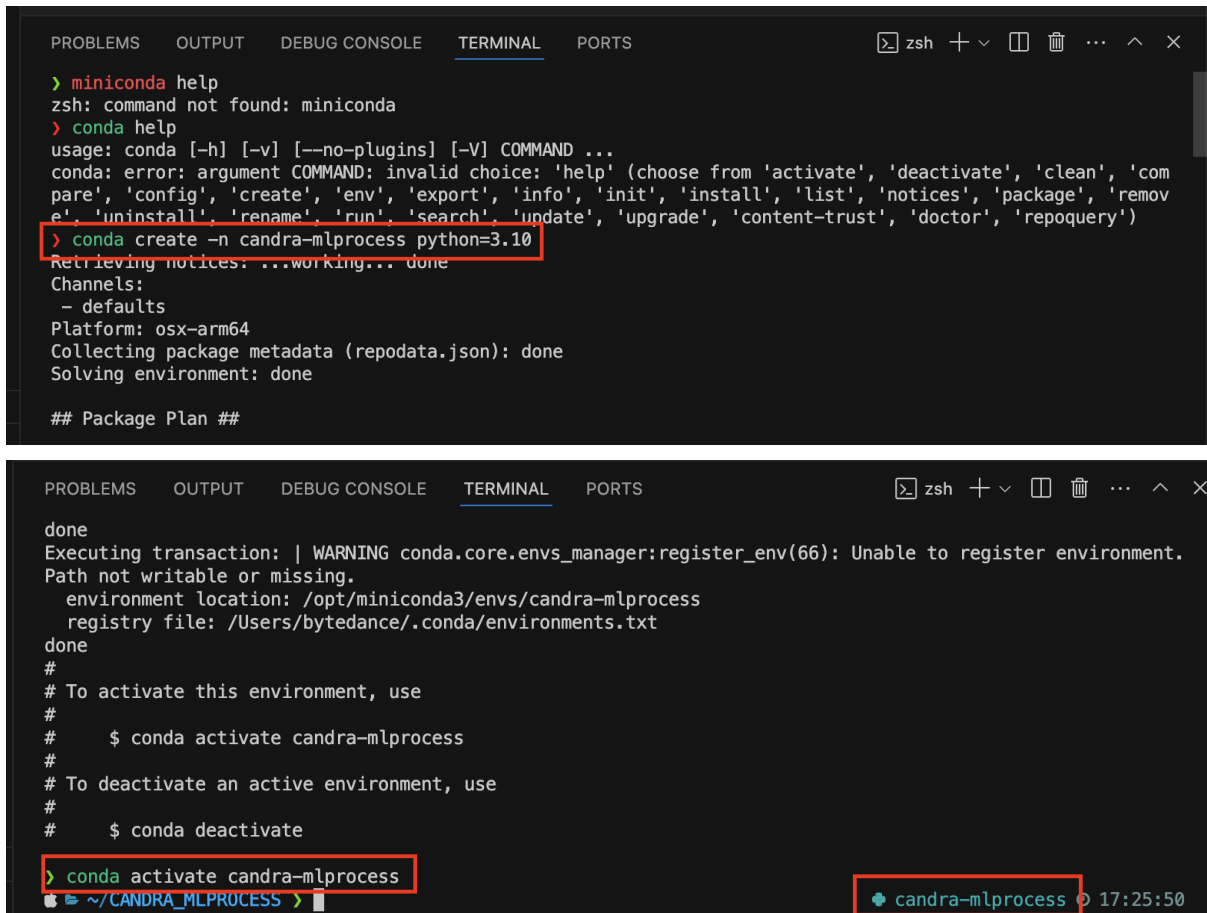
- Make a copy docs ini sebelum menjawab.
- Studi kasus pada soal ini akan **digunakan** untuk mentoring selanjutnya.
- Tulis jawaban Anda dalam word processor dan ekspor ke PDF untuk soal nomor 1 dan 2
- Tulis jawaban Anda dalam jupyter notebook dan python script untuk soal nomor 3 dan 4
- Archive file PDF dan keseluruhan root folder project Anda ke ZIP, **kecuali folder venv**
- Beri nama `[NAMA LENGKAP]_MLPROCESS_1` file archive Anda
- Submit file archive Anda melalui link submission yang telah disediakan

## Soal

1. **[25 points]** Project Environment Setup
  - a. **[5 points]** Buat folder project



b. [5 points] Buat python virtual environment (venv)



The image shows two screenshots of a terminal window. The first screenshot shows the command `> conda create -n candra-mlprocess python=3.10` being executed. The output shows the environment being created successfully. The second screenshot shows the command `> conda activate candra-mlprocess` being executed. The output shows the environment being activated, and the prompt changes to `~ /CANDRA_MLPROCESS >`. The terminal window has tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, and PORTS. The terminal window title is `zsh`.

```
> miniconda help
zsh: command not found: miniconda
> conda help
usage: conda [-h] [-v] [--no-plugins] [-V] COMMAND ...
conda: error: argument COMMAND: invalid choice: 'help' (choose from 'activate', 'deactivate', 'clean', 'com
pare', 'config', 'create', 'env', 'export', 'info', 'init', 'install', 'list', 'notices', 'package', 'remov
e', 'uninstall', 'rename', 'run', 'search', 'update', 'upgrade', 'content-trust', 'doctor', 'repoquery')
> conda create -n candra-mlprocess python=3.10
Retrieving notices: ...working... done
Channels:
 - defaults
Platform: osx-arm64
Collecting package metadata (repodata.json): done
Solving environment: done

## Package Plan ##

done
Executing transaction: | WARNING conda.core.envs_manager:register_env(66): Unable to register environment.
Path not writable or missing.
  environment location: /opt/miniconda3/envs/candra-mlprocess
  registry file: /Users/bytedance/.conda/environments.txt
done
#
# To activate this environment, use
#
#     $ conda activate candra-mlprocess
#
# To deactivate an active environment, use
#
#     $ conda deactivate
#
> conda activate candra-mlprocess
~ /CANDRA_MLPROCESS >
```

conda-mlprocess 17:25:50

c. [5 points] Update pip

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS zsh + - [ ] [ ] ... ^ X
--use-deprecated <feature> Enable deprecated functionality, that will be removed in the future.
> python --version
Python 3.10.14
> python3 -m pip install --upgrade pip
Requirement already satisfied: pip in /Library/Frameworks/Python.framework/Versions/3.11/lib/python3.11/site-packages (23.2.1)
Collecting pip
  Obtaining dependency information for pip from https://files.pythonhosted.org/packages/8a/6a/19e9fe04fca059ccf770861c7d5721ab4c2aebc539889e97c7977528a53b/pip-24.0-py3-none-any.whl.metadata
    Downloading pip-24.0-py3-none-any.whl.metadata (3.6 kB)
  Downloading pip-24.0-py3-none-any.whl (2.1 MB)
    2.1/2.1 MB 6.1 MB/s eta 0:00:00
Installing collected packages: pip
  Attempting uninstall: pip
    Found existing installation: pip 23.2.1
    Uninstalling pip-23.2.1:
      Successfully uninstalled pip-23.2.1
```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS zsh + - [ ] [ ] ... ^ X
Attempting uninstall: pip
  Found existing installation: pip 23.2.1
  Uninstalling pip-23.2.1:
    Successfully uninstalled pip-23.2.1
WARNING: The scripts pip, pip3 and pip3.11 are installed in '/Library/Frameworks/Python.framework/Versions/3.11/bin' which is not on PATH.
Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.
Successfully installed pip-24.0
> python --version
Python 3.10.14
> python3 --version
Python 3.11.6
> python -m pip install --upgrade pip
Requirement already satisfied: pip in /opt/miniconda3/envs/candra-mlprocess/lib/python3.10/site-packages (24.0)
~/CANDRA_MLPROCESS > candra-mlprocess 17:30:56
```

d. [5 points] Install dependencies

- Install package berikut:

- pandas
- scikit-learn
- imblearn
- joblib
- numpy
- scipy
- seaborn
- fastapi
- jupyterlab
- Requests

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
4.0)
> pip install pandas scikit-learn imblearn joblib numpy scipy seaborn fastapi jupyterlab requests

Collecting pandas
  Using cached pandas-2.2.2-cp310-cp310-macosx_11_0_arm64.whl.metadata (19 kB)
Collecting scikit-learn
  Downloading scikit_learn-1.5.0-cp310-cp310-macosx_12_0_arm64.whl.metadata (11 kB)
Collecting imblearn
  Downloading imblearn-0.0-py2.py3-none-any.whl.metadata (355 bytes)
Collecting joblib
  Using cached joblib-1.4.2-py3-none-any.whl.metadata (5.4 kB)
Collecting numpy
  Using cached numpy-1.26.4-cp310-cp310-macosx_11_0_arm64.whl.metadata (61 kB)
Collecting scipy
  Downloading scipy-1.13.1-cp310-cp310-macosx_12_0_arm64.whl.metadata (60 kB)
  60.6/60.6 kB 1.6 MB/s eta 0:00:00
Collecting seaborn
```

e. [5 points] Non aktifkan venv Anda

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
ArgumentError: deactivate does not accept arguments
remainder_args: ['candra-mlprocess']

> conda help
usage: conda [-h] [-v] [--no-plugins] [-V] COMMAND ...
conda: error: argument COMMAND: invalid choice: 'help' (choose from 'activate', 'deactivate', 'clean', 'com
pare', 'config', 'create', 'env', 'export', 'info', 'init', 'install', 'list', 'notices', 'package', 'remov
e', 'uninstall', 'rename', 'run', 'search', 'update', 'upgrade', 'content-trust', 'doctor', 'repoquery')
> conda deactivate candra-mlprocess

ArgumentError: deactivate does not accept arguments
remainder_args: ['candra-mlprocess']

> conda deactivate
~/.CANDRA_MLPROCESS > base 17:35:44
```

2. [25 points] Rangkum permasalahan bisnis

Rangkum [mockup interview](#) antara user dan DS di bagian akhir dari dokumen ini

- **Rangkuman Anda harus bisa menjawab pertanyaan berikut:**

PERTANYAAN	JAWABAN
Latar belakang permasalahan bisnis	Terdapat masalah dalam peminjaman Uang, yaitu banyaknya nasabah yang menjadi peminjam menunggak-nunggak tidak membayar sehingga membuat masalah pada Perusahaan Loan ini
Objektif bisnis yang ingin dicapai	Ingin menurunkan Jumlah NPL (Non-Performing Loan) dan ingin mempunyai sistem yang mampu mendeteksi pinjaman yang beresiko sehingga dapat pihak Bank cegah agar tidak menunggak-nunggak pinjamannya.
Metrik pengukuran bisnis yang akan digunakan	<i>Turunnya jumlah Nasabah yang merupakan Non-Performing Loan dalam Percent(%)</i>
Kandidat solusi machine learning yang akan dibangun	<i>Membangun sistem Machine Learning Klasifikasi Binary</i>
Metrik pengukuran machine learning yang akan digunakan	<i>F1-score dengan tingkat prediksi &gt; 95%</i>

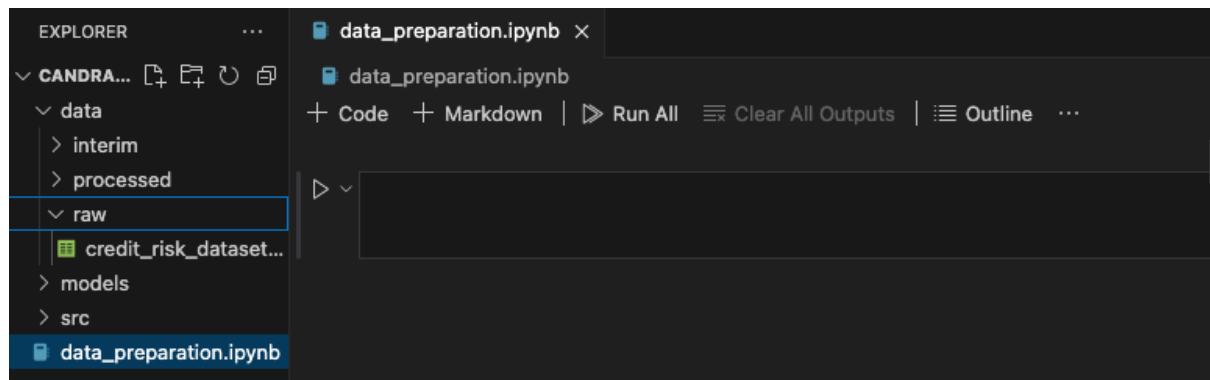
3. [25 points] Persiapan Dataset

- [1 points] Buat satu file bernama `data_preparation.ipynb` dan letakkan pada root folder project Anda
- [1 points] Letakkan file CSV dataset yang bernama `credit_risk_dataset.csv` ke folder `raw`

**Sertakan screenshot hasil dari pemindahan file tersebut.**

```
> conda deactivate
> cd Downloads
cd: no such file or directory: Downloads
> cd ../Downloads
> cp credit_risk_dataset.csv ../CANDRA_MLPROCESS
> cd ../CANDRA_MLPROCESS
> mv credit_risk_dataset.csv data/raw
~ /CANDRA_MLPROCESS >
```

base 09:57:42



**Note:**

- Jawaban selanjutnya berada di file Notebook ya kak, terimakasih..