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## Deployment Data Science Prediksi Karyawan Resign Menggunakan Framework Flask

1. Pertama, buat environment terlebih dahulu dengan mengetikkan `conda create -n ds python=3.9` di Anaconda Prompt tunggu prosesnya sampai selesai.

```
Anaconda Prompt (anaconda3)

(base) C:\Users\Ashad>conda create -n ds python=3.9
Collecting package metadata (current_repodata.json): done
Solving environment: done

==> WARNING: A newer version of conda exists. <==
  current version: 4.14.0
  latest version: 22.9.0

Please update conda by running

    $ conda update -n base -c defaults conda

## Package Plan ##

  environment location: C:\Users\Ashad\anaconda3\envs\ds

  added / updated specs:
    - python=3.9

The following packages will be downloaded:

  package                                     build                                155 KB
  -----
  certifi-2022.9.14                          py39haa95532_0
  pip-22.1.2                                  py39haa95532_0                        2.5 MB
```

2. Kedua ketikkan `conda activate ds`

```
Anaconda Prompt (anaconda3) - "C:\Users\Ashad\anaconda3\condabin\conda.bat" activate ds

Downloading and Extracting Packages
tzdata-2022c | 107 KB | ##### | 100%
pip-22.1.2 | 2.5 MB | ##### | 100%
python-3.9.13 | 17.1 MB | ##### | 100%
certifi-2022.9.14 | 155 KB | ##### | 100%
setuptools-63.4.1 | 1.0 MB | ##### | 100%
Preparing transaction: done
Verifying transaction: done
Executing transaction: done
#
# To activate this environment, use
#
#     $ conda activate ds
#
# To deactivate an active environment, use
#
#     $ conda deactivate
#
Retrieving notices: ...working... done
(base) C:\Users\Ashad>conda activate ds
(ds) C:\Users\Ashad>
```

## AI4Jobs | Kampus Merdeka Batch 3

- Ketiga, install Framework Flasknya dengan mengetikkan **pip install Flask**

```
(ds) C:\Users\Ashad>pip install Flask
Collecting Flask
  Downloading Flask-2.2.2-py3-none-any.whl (101 kB)
----- 101.5/101.5 kB 5.7 MB/s eta 0:00:00
Collecting importlib-metadata>=3.6.0
  Downloading importlib_metadata-4.12.0-py3-none-any.whl (21 kB)
Collecting Werkzeug>=2.2.2
  Downloading Werkzeug-2.2.2-py3-none-any.whl (232 kB)
----- 232.7/232.7 kB 2.9 MB/s eta 0:00:00
Collecting click>=8.0
  Using cached click-8.1.3-py3-none-any.whl (96 kB)
Collecting itsdangerous>=2.0
  Downloading itsdangerous-2.1.2-py3-none-any.whl (15 kB)
Collecting Jinja2>=3.0
  Downloading Jinja2-3.1.2-py3-none-any.whl (133 kB)
----- 133.1/133.1 kB 8.2 MB/s eta 0:00:00
Collecting colorama
  Using cached colorama-0.4.5-py2.py3-none-any.whl (16 kB)
Collecting zipp>=0.5
  Downloading zipp-3.8.1-py3-none-any.whl (5.6 kB)
Collecting MarkupSafe>=2.0
  Downloading MarkupSafe-2.1.1-cp39-cp39-win_amd64.whl (17 kB)
Installing collected packages: zipp, MarkupSafe, itsdangerous, colorama, Werkzeug, Jinja2, importlib-metadata, click, Flask
Successfully installed Flask-2.2.2 Jinja2-3.1.2 MarkupSafe-2.1.1 Werkzeug-2.2.2 click-8.1.3 colorama-0.4.5 importlib-metadata-4.12.0 itsdangerous-2.1.2 zipp-3.8.1
(ds) C:\Users\Ashad>
```

- Keempat, masuk ke folder Project yang telah dibuat sesuai instruksi pada link ini <https://rasyidev.notion.site/Deployment-Flask-Data-Science-8b2af7b552394b5c8c8f16b29095103f>

Lalu ketikkan **cd Project**

```
(ds) C:\Users\Ashad>cd Project
(ds) C:\Users\Ashad\Project>
```

Selanjutnya masuk ke folder yang telah dibuat, saya menamainya pkr dan ketikkan **cd pkr**

```
Successfully installed Flask-2.2.2 Jinja2-3.1.2 MarkupSafe-2.1.1 Werkzeug-2.2.2 click-8.1.3 colorama-0.4.5 importlib-metadata-4.12.0 itsdangerous-2.1.2 zipp-3.8.1

(ds) C:\Users\Ashad>cd Project
(ds) C:\Users\Ashad\Project>cd flask-ds
The system cannot find the path specified.

(ds) C:\Users\Ashad\Project>cd pkr
(ds) C:\Users\Ashad\Project\pkr>
```

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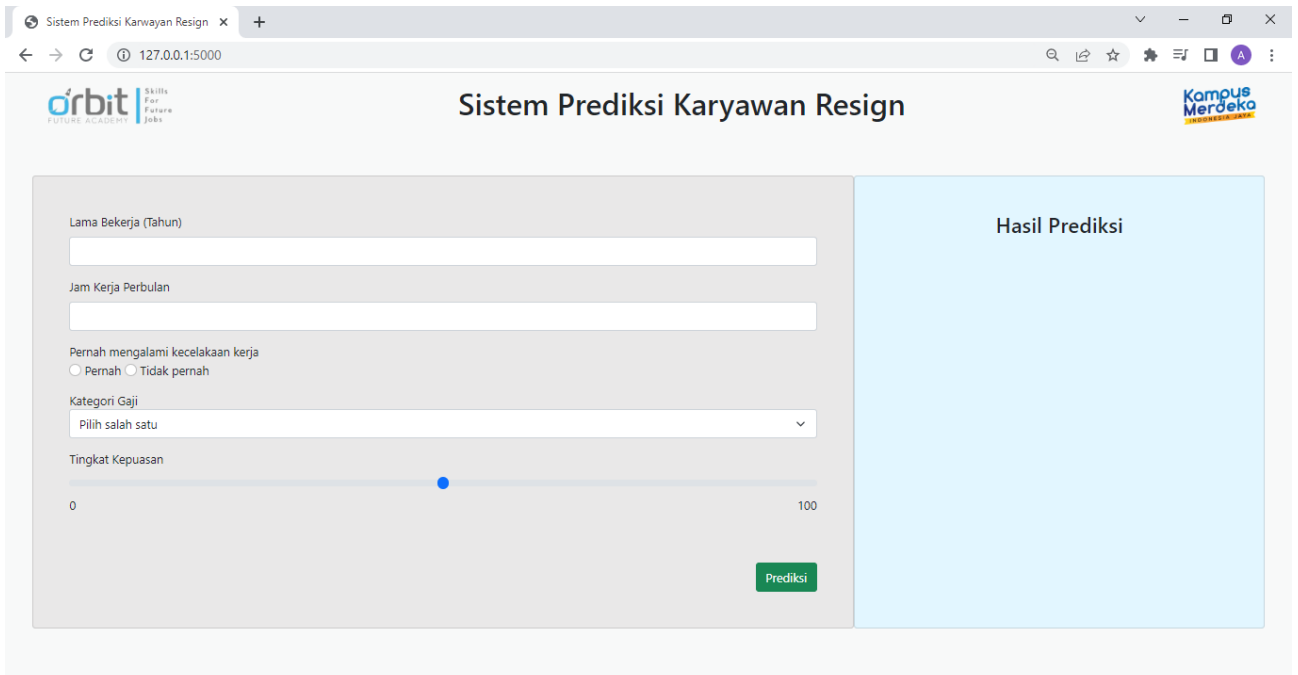
5. Kelima, install sklearn dengan perintah `pip install -U scikit-learn`

```
(ds) C:\Users\Ashad\Project\pkr>pip install -U scikit-learn
Collecting scikit-learn
  Downloading scikit_learn-1.1.2-cp39-cp39-win_amd64.whl (7.4 MB)
----- 7.4/7.4 MB 4.5 MB/s eta 0:00:00
Collecting scipy>=1.3.2
  Downloading scipy-1.9.1-cp39-cp39-win_amd64.whl (38.6 MB)
----- 38.6/38.6 MB 2.0 MB/s eta 0:00:00
Collecting numpy>=1.17.3
  Downloading numpy-1.23.3-cp39-cp39-win_amd64.whl (14.7 MB)
----- 14.7/14.7 MB 3.4 MB/s eta 0:00:00
Collecting joblib>=1.0.0
  Downloading joblib-1.2.0-py3-none-any.whl (297 kB)
----- 298.0/298.0 kB 4.6 MB/s eta 0:00:00
Collecting threadpoolctl>=2.0.0
  Downloading threadpoolctl-3.1.0-py3-none-any.whl (14 kB)
Installing collected packages: threadpoolctl, numpy, joblib, scipy, scikit-learn
Successfully installed joblib-1.2.0 numpy-1.23.3 scikit-learn-1.1.2 scipy-1.9.1 threadpoolctl-3.1.0
(ds) C:\Users\Ashad\Project\pkr>
```

6. Keenam, ketikan flask run menjalankan flasknya

```
(ds) C:\Users\Ashad\Project\pkr>flask run
C:\Users\Ashad\anaconda3\envs\ds\lib\site-packages\sklearn\base.py:329: UserWarning: Trying to unpickle estimator DecisionTreeClassifier from version 1.0.2 when using version 1.1.2. This might lead to breaking code or invalid results. Use at your own risk. For more info please refer to:
https://scikit-learn.org/stable/model_persistence.html#security-maintainability-limitations
warnings.warn(
C:\Users\Ashad\anaconda3\envs\ds\lib\site-packages\sklearn\base.py:329: UserWarning: Trying to unpickle estimator StandardScaler from version 1.0.2 when using version 1.1.2. This might lead to breaking code or invalid results. Use at your own risk. For more info please refer to:
https://scikit-learn.org/stable/model_persistence.html#security-maintainability-limitations
warnings.warn(
* Debug mode: off
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
```

Copy alamat ini <http://127.0.0.1:5000> di web browser. Disini saya menggunakan Chrome



**Sistem Prediksi Karyawan Resign**

Lama Bekerja (Tahun)

Jam Kerja Perbulan

Pernah mengalami kecelakaan kerja  
☐ Pernah ☐ Tidak pernah

Kategori Gaji  
 Pilih salah satu

Tingkat Kepuasan  
 0 100

**Prediksi**

**Hasil Prediksi**

## AI4Jobs | Kampus Merdeka Batch 3

Saya coba inputkan seperti ini

The screenshot shows a web form for the AI4Jobs application. It contains the following fields and controls:

- Lama Bekerja (Tahun)**: A text input field containing the value "5".
- Jam Kerja Perbulan**: A text input field containing the value "100".
- Pernah mengalami kecelakaan kerja**: A radio button group with two options: "Pernah" (unselected) and "Tidak pernah" (selected).
- Kategori Gaji**: A dropdown menu currently showing "Low".
- Tingkat Kepuasan**: A horizontal slider bar ranging from 0 to 100. The slider handle is positioned at approximately 25%.
- Prediksi**: A green button located at the bottom right of the form.

Hasilnya

The screenshot displays the prediction result in a light blue box. The text inside reads:

**Hasil Prediksi**  
Karyawan tersebut diprediksi **95% Tidak Resign**