

LAPORAN PRAKTIKUM

TEKNOLOGI CLOUD

PERTEMUAN KE – 03



Disusun Oleh :

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BAB I

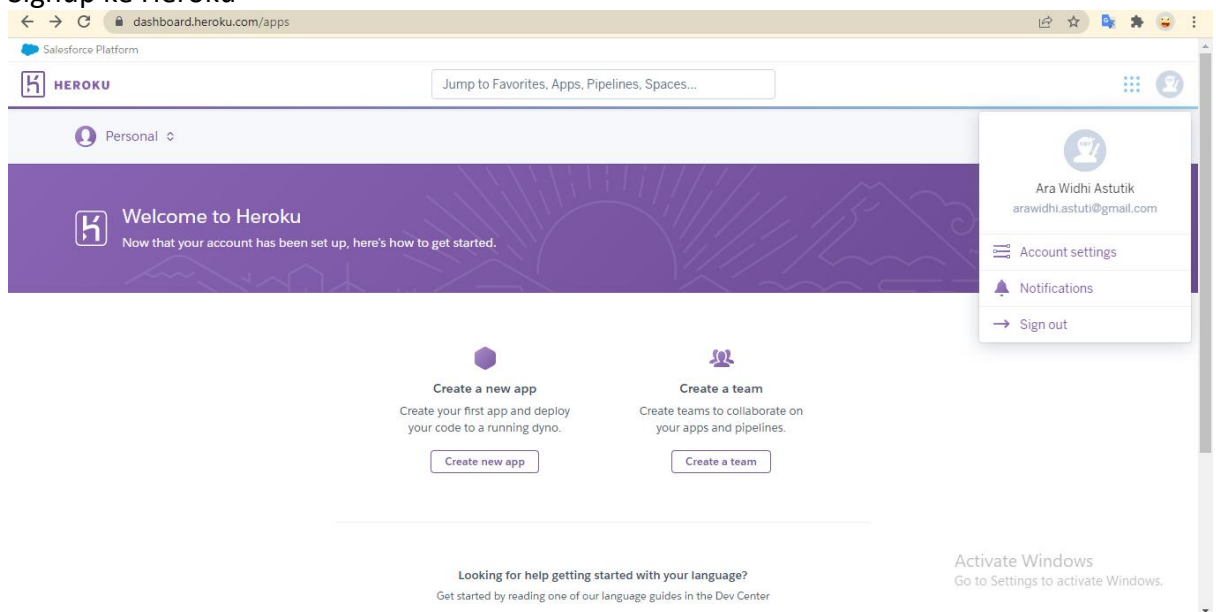
PLATFORM AS A SERVICE

PEMBAHASAN

Latihan

Link github : <https://github.com/Arawidhi/TeknoCloud>

1. Signup ke Heroku

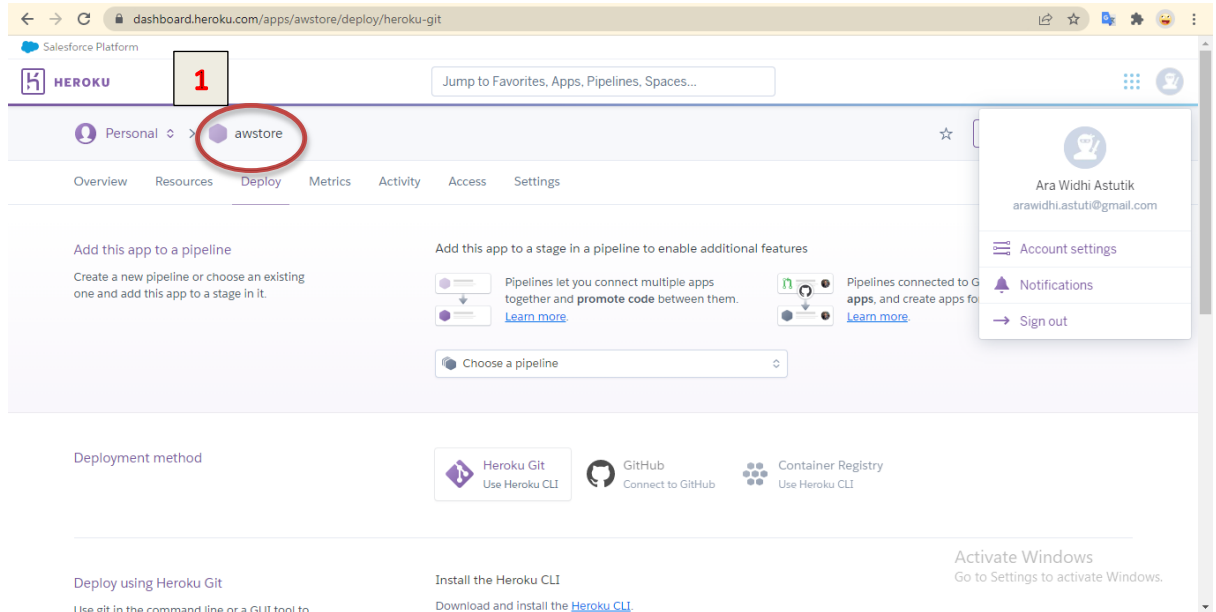


Uraian :

Heroku adalah web hosting berbasis cloud digunakan untuk melakukan pengembangan atau tester aplikasi dengan support banyak bahasa pemrograman, seperti php, node.js, python, ruby dan lain-lain. Yang membuat heroku menarik dari web hosting gratisan lainnya adalah untuk melakukan upload aplikasi atau deploy sangat mudah, karena sudah mendukung git version control.

Untuk melakukan upload projek/aplikasi, kita terlebih dahulu melakukan registrasi pada situs heroku. Kemudian mulai mengisikan data untuk proses mendaftar. Setelah selesai mendaftar, nantinya kita akan mendapatkan email untuk verifikasi. Jika semuanya sudah selesai, maka siap digunakan.

2. Membuat aplikasi baru melalui dashboard



Uraian :

Pada soal kita diminta untuk membuat aplikasi baru pada dashboard Heroku, adapun langkah-langkahnya adalah :

- Masuk ke dashboard heroku, lalu "Create new app"
- Pada form App name, isi dengan nama proyek kita
- Setelah App sudah selesai dibuat, saatnya deploy aplikasi kita ke Heroku

3. Install Python (dan PostgreSQL jika diperlukan)

Uraian :

Pada praktikum pertemuan ini, saya tidak memakai PostgreSQL, melainkan menggunakan Python.

```
Microsoft Windows [Version 10.0.18363.1556]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\Asus>python --version
Python 3.8.1
```

Uraian :

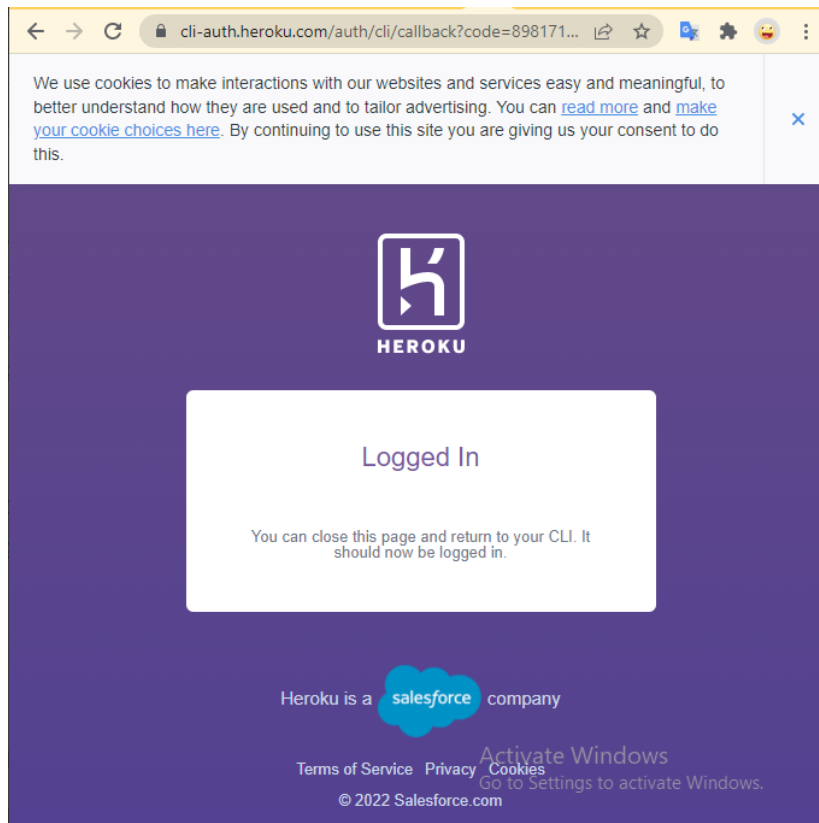
Tampilan diatas merupakan versi python yang saat ini digunakan.

4. Kerjakan Getting Started on Heroku with Python, tidak perlu mengerjakan heroku pg:psql jika tidak ada PostgreSQL dilokal

Uraian :

- a. Login Heroku melalui cmd

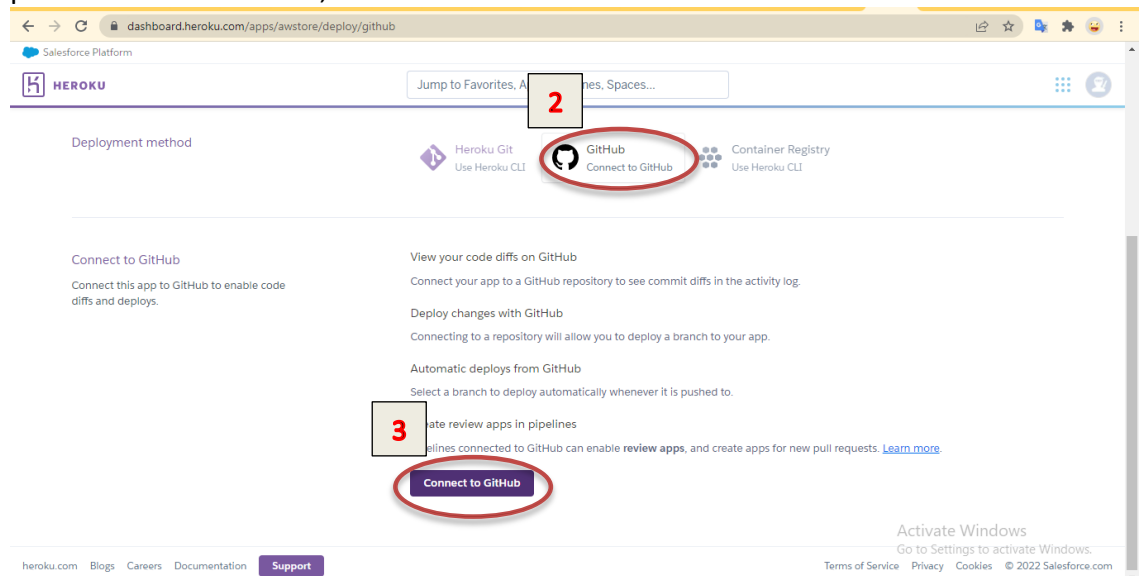
```
C:\Users\Asus>heroku login
heroku: Press any key to open up the browser to login or q to exit:
Opening browser to https://cli-auth.heroku.com/auth/cli/browser/8c90efe4-f5a9-412a-a989-56332e41041e?requestor=SFMyNTY.g2gDbQAAAA0zNi43Mi4yMTUuMTc0bgYAKOGMTn8BYgABUYA.qRUdJkw6B6WTliuZPsv6GF_74wP-j3RwaF2tBOMfJ5s
Logging in... done
Logged in as arawidhi.astuti@gmail.com
```



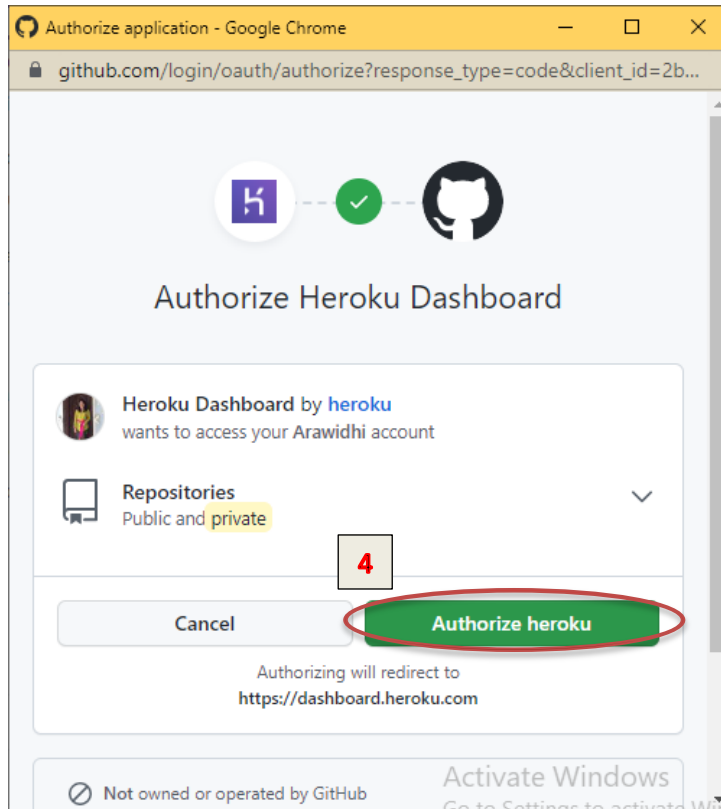
Uraian :

Kemudian mulai login pada Heroku melalui Command Prompt, jika login berhasil maka akan terdeteksi email kita dan mulai mengarahkannya pada tab Heroku seperti output diatas.

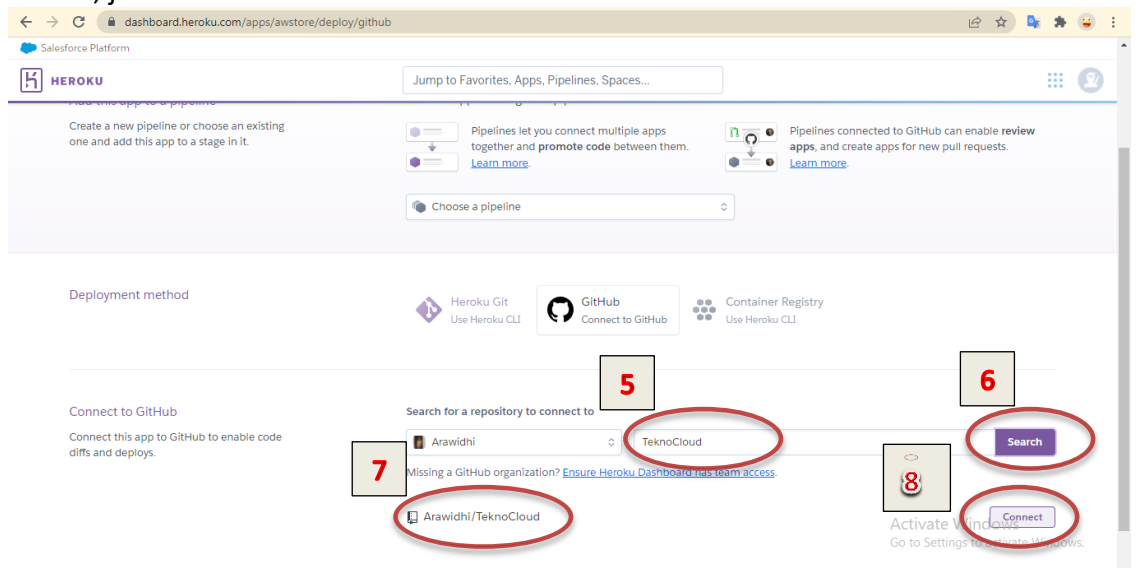
- b. Mencoba menghubungkan Github dengan Heroku pada laman Heroku
 - Login terlebih dahulu ke akun Heroku dan Github, jika sudah login cari Github pada Connect to Github, lalu klik.



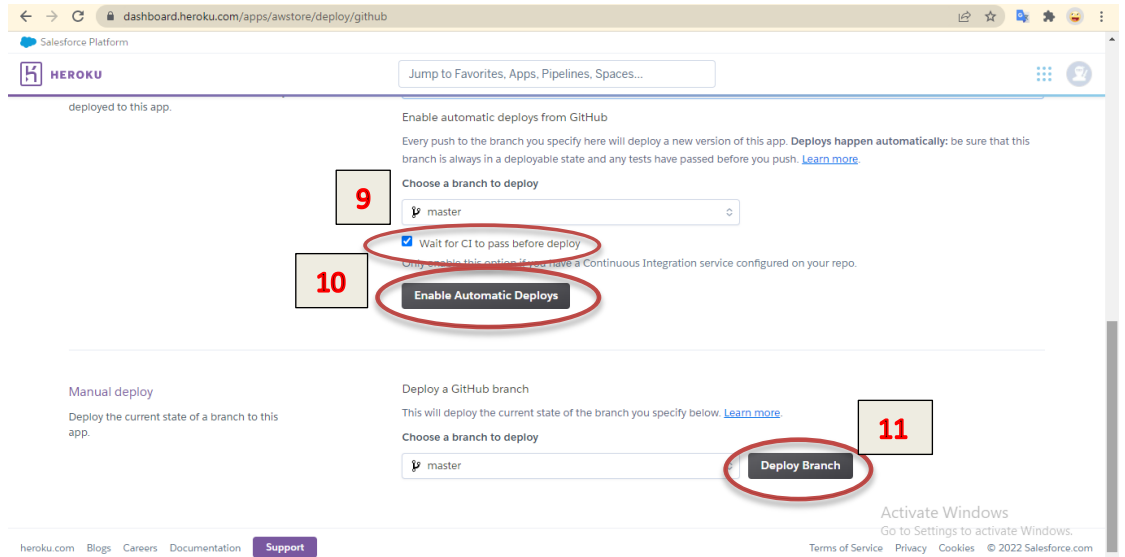
- Klik Authorize Heroku.



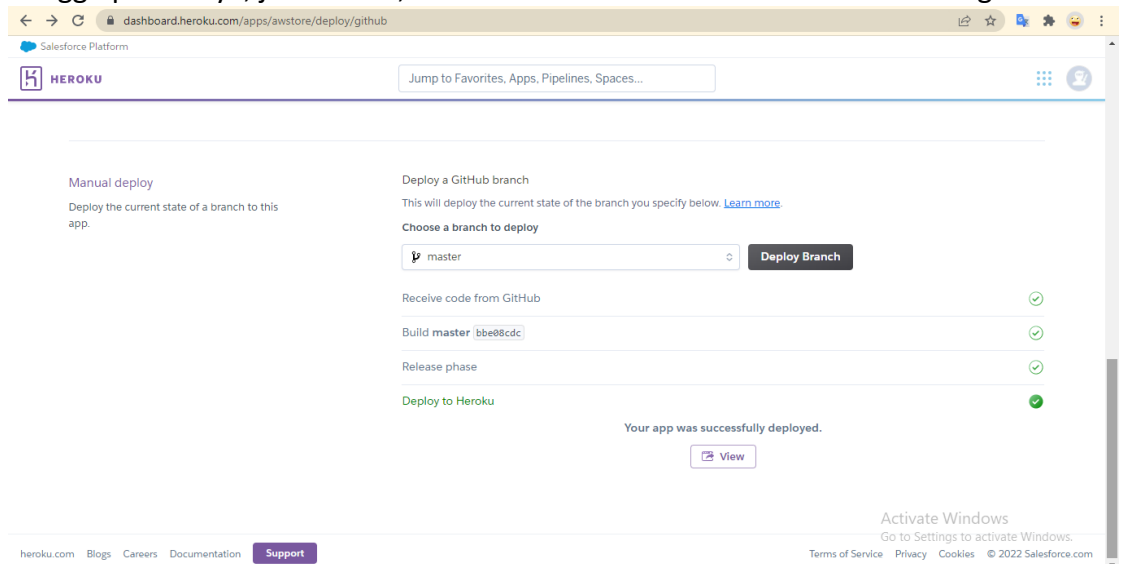
- Setelah itu, masukkan nama repository kita yang ada pada Github, dan klik search, jika ada klik Connect.



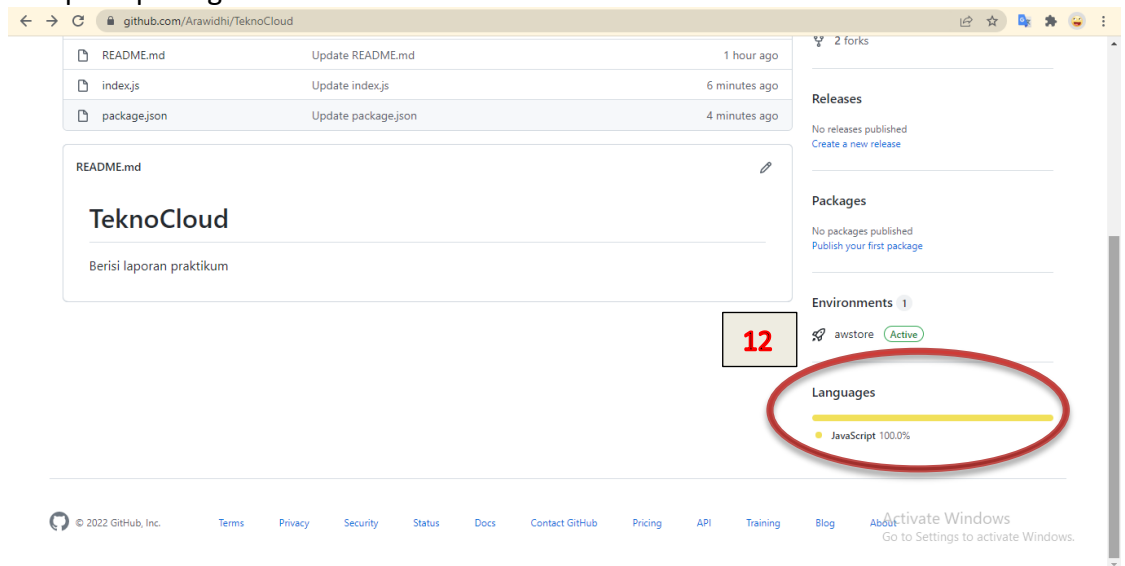
- Jika sudah terhubung, ceklist pada bagian Wait for CI to pass before deploy dan klik tombol Enable Automatic Deploy, kemudian dilanjutkan dengan klik Deploy Branch.



- Tunggu prosesnya, jika selesai, klik view untuk memastikan telah terhubung.



- Tampilan pada github



- Melakukan perintah untuk membuat salinan repository lokal

```
MINGW64:/d/Prak.TeknoCloud/Praktikum03/python-getting-started
Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03
$ git clone https://github.com/heroku/python-getting-started.git
Cloning into 'python-getting-started'...
remote: Enumerating objects: 512, done.
remote: Total 512 (delta 0), reused 0 (delta 0), pack-reused 512R
Receiving objects: 100% (512/512), 95.55 KiB | 923.00 KiB/s, done.
Resolving deltas: 100% (237/237), done.
```

Uraian :

Dalam hal ini, sebelum kita mengcloning heroku pada github kita wajib membuat salinan repository terlebih dahulu. Pada source code diatas, saya membuat sebuah folder pada direktori D dengan nama Praktikum03, setelah itu mulai mengcloningnya pada gitbash. Alamat remote server yang saya gunakan untuk getting started nantinya yaitu :

<https://github.com/heroku/python-getting-started.git>

pada akun github : <https://github.com/heroku>

- Mulai melakukan cd python-getting-started

```
Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03
$ cd python-getting-started
```

Uraian :

Setelah berhasil melakukan getting-started, pada salinan repository lokal kita akan terdapat penambahan beberapa file dari getting-started.

This PC > Local Disk (D:) > Prak.TeknoCloud > Praktikum03 > python-getting-started >

Name	Date modified	Type	Size
.git	03/03/2022 14.23	File folder	
.github	03/03/2022 14.20	File folder	
gettingstarted	03/03/2022 15.49	File folder	
hello	03/03/2022 15.49	File folder	
staticfiles	03/03/2022 15.51	File folder	
.env	03/03/2022 14.20	ENV File	1 KB
.gitignore	03/03/2022 14.20	Text Document	1 KB
app	03/03/2022 14.20	JSON File	1 KB
db.sqlite3	03/03/2022 15.52	SQLITE3 File	0 KB
manage	03/03/2022 14.20	PY File	1 KB
Procfile	03/03/2022 14.20	File	1 KB
Procfile.windows	03/03/2022 14.20	WINDOWS File	1 KB
README	03/03/2022 14.20	MD File	1 KB
requirements	03/03/2022 14.20	Text Document	1 KB
runtime	03/03/2022 14.20	Text Document	1 KB

- Mulai membuat proyek pada Heroku melalui python

```
MINGW64:/d/Prak.TeknoCloud/Praktikum03/python-getting-started
Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03/python-getting-started (main)
$ heroku create
» Warning: heroku update available from 7.46.2 to 7.59.3.
Creating app... done, • stormy-depths-38300
https://stormy-depths-38300.herokuapp.com/ | https://git.heroku.com/stormy-depths-38300.git
```

Uraian :

Jika kita ingin membuat sebuah proyek namun melalui python, kita bisa langsung melakukannya dengan cara yaitu heroku create. Apabila berhasil dilakukan, maka akan mendapatkan 2 link yaitu link pada heroku dan github.

<https://stormy-depths-38300.herokuapp.com/>

<https://git.heroku.com/stormy-depths-38300.git>

- Mengirimkan perubahan file setelah di commit ke remote repository

```
Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03/python-getting-started (main)
$ git push heroku main
Enumerating objects: 512, done.
Counting objects: 100% (512/512), done.
Delta compression using up to 4 threads
Compressing objects: 100% (238/238), done.
Writing objects: 100% (512/512), 95.53 KiB | 5.62 MiB/s, done.
Total 512 (delta 237), reused 512 (delta 237), pack-reused 0
remote: Compressing source files... done.
remote: Building source:
remote:
remote: -----> Building on the Heroku-20 stack
remote: -----> Determining which buildpack to use for this app
remote: -----> Python app detected
remote: -----> Using Python version specified in runtime.txt
remote: -----> Installing python-3.10.2
remote: -----> Installing pip 21.3.1, setuptools 57.5.0 and wheel 0.37.0
remote: -----> Installing requirements with pip
remote: Collecting django
remote:   Downloading Django-4.0.3-py3-none-any.whl (8.0 MB)
remote: Collecting gunicorn
remote:   Downloading gunicorn-20.1.0-py3-none-any.whl (79 kB)
remote: Collecting django-heroku
remote:   Downloading django_heroku-0.3.1-py2.py3-none-any.whl (6.2 kB)
remote: Collecting sqlparse>=0.2.2
remote:   Downloading sqlparse-0.4.2-py3-none-any.whl (42 kB)
remote: Collecting asgiref<4,>=3.4.1
remote:   Downloading asgiref-3.5.0-py3-none-any.whl (22 kB)
remote: Collecting whitenoise
remote:   Downloading whitenoise-6.0.0-py3-none-any.whl (19 kB)
remote: Collecting dj_database_url>=0.5.0
remote:   Downloading dj_database_url-0.5.0-py2.py3-none-any.whl (5.5 kB)
remote: Collecting psycopg2
remote:   Downloading psycopg2-2.9.3.tar.gz (380 kB)
remote: Preparing metadata (setup.py): started
remote: Preparing metadata (setup.py): finished with status 'done'
remote: Building wheels for collected packages: psycopg2
remote: Building wheel for psycopg2 (setup.py): started
```



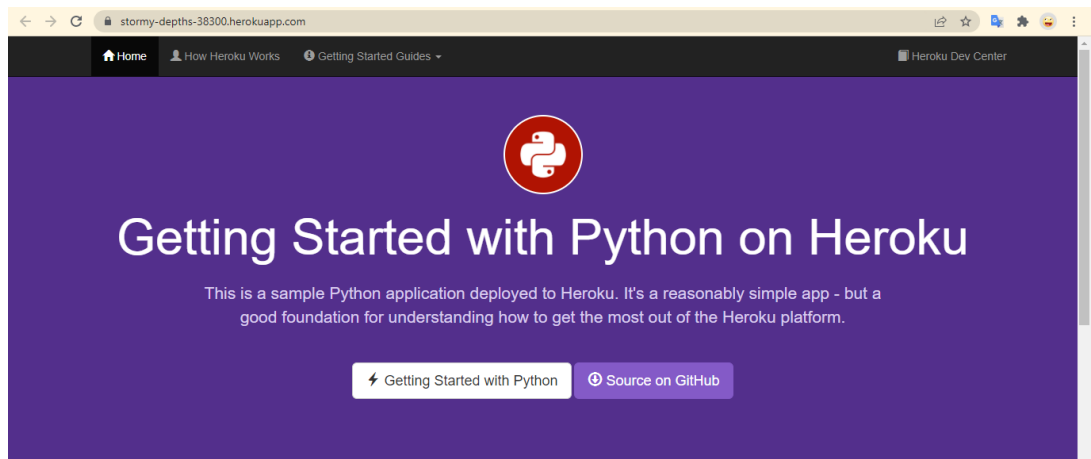
```
MINGW64:/d/Prak.TeknoCloud/Praktikum03/python-getting-started
remote: Collecting django
remote:   Downloading Django-4.0.3-py3-none-any.whl (8.0 MB)
remote: Collecting gunicorn
remote:   Downloading gunicorn-20.1.0-py3-none-any.whl (79 kB)
remote: Collecting django-heroku
remote:   Downloading django_heroku-0.3.1-py2.py3-none-any.whl (6.2 kB)
remote: Collecting sqlparse>=0.2.2
remote:   Downloading sqlparse-0.4.2-py3-none-any.whl (42 kB)
remote: Collecting asgiref<4,>=3.4.1
remote:   Downloading asgiref-3.5.0-py3-none-any.whl (22 kB)
remote: Collecting whitenoise
remote:   Downloading whitenoise-6.0.0-py3-none-any.whl (19 kB)
remote: Collecting dj-database-url>=0.5.0
remote:   Downloading dj_database_url-0.5.0-py2.py3-none-any.whl (5.5 kB)
remote: Collecting psycopg2
remote:   Downloading psycopg2-2.9.3.tar.gz (380 kB)
remote:   Preparing metadata (setup.py): started
remote:   Preparing metadata (setup.py): finished with status 'done'
remote: Building wheels for collected packages: psycopg2
remote:   Building wheel for psycopg2 (setup.py): started
remote:   Building wheel for psycopg2 (setup.py): finished with status 'done'
remote:   Created wheel for psycopg2: filename=psycopg2-2.9.3-cp310-cp310-linux_x86_64.whl size=586507 sha256=7abb9160573eff3a0e4d849a74eaf43a604a756bf72788b28ff22c820717b202
remote:   Stored in directory: /tmp/pip-ephem-wheel-cache-awqhekfr/wheels/81/b6/3d/091a
ad3e8919ea76c84c2674b02ce3ab52de882e091c39249e
remote:   Successfully built psycopg2
remote: Installing collected packages: sqlparse, asgiref, whitenoise, psycopg2, django,
dj-database-url, gunicorn, django-heroku
remote: Successfully installed asgiref-3.5.0 dj-database-url-0.5.0 django-4.0.3 django-
heroku-0.3.1 gunicorn-20.1.0 psycopg2-2.9.3 sqlparse-0.4.2 whitenoise-6.0.0
remote: -----> $ python manage.py collectstatic --noinput
remote: 129 static files copied to '/tmp/build_a82afa80/staticfiles', 379 post-processe
d.
remote: -----> Discovering process types
remote:   Procfile declares types -> web
remote: -----> Compressing...
remote:   Done: 68.1M
remote: -----> Launching...
remote:   Released v5
remote:   https://stormy-depths-38300.herokuapp.com/ deployed to Heroku
remote: Verifying deploy... done.
To https://git.heroku.com/stormy-depths-38300.git
* [new branch]    main -> main
```

Uraian :

Setelah berhasil membuat proyek baru , langkah selanjutnya adalah melakukan git push untuk mengirimkan perubahan file proyek yang nantinya akan dibuat.

- Membuka halaman Heroku

```
Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03/python-getting-started (main)
$ heroku open
» Warning: heroku update available from 7.46.2 to 7.59.3.
```



Uraian :

Tampilan output diatas merupakan halaman awal untuk memulai membuat proyek yang dibuat dan dilakukan pada python sebelumnya.

- Membaca file yang ada pada heroku

MINGW64/d/Prak.TeknoCloud/Praktikum03/python-getting-started

```
$
$ heroku logs --tail
» warning: heroku update available from 7.46.2 to 7.59.3.
2022-03-03T07:23:43.075947+00:00 app[api]: Initial release by user arawidhi.astuti@gmail.com
2022-03-03T07:23:43.075947+00:00 app[api]: Release v1 created by user arawidhi.astuti@gmail.com
2022-03-03T07:23:45.414446+00:00 app[api]: Release v2 created by user arawidhi.astuti@gmail.com
2022-03-03T07:23:45.414446+00:00 app[api]: Enable Logplex by user arawidhi.astuti@gmail.com
2022-03-03T07:25:12.000000+00:00 app[api]: Build started by user arawidhi.astuti@gmail.com
2022-03-03T07:25:47.853074+00:00 app[api]: Running release v3 commands by user arawidhi.astuti@gmail.com
2022-03-03T07:25:47.853074+00:00 app[api]: Attach DATABASE (@ref:postgresql-acute-10626) by user arawidhi.astuti@gmail.com
2022-03-03T07:25:47.881752+00:00 app[api]: Release v4 created by user arawidhi.astuti@gmail.com
2022-03-03T07:25:47.881752+00:00 app[api]: @ref:postgresql-acute-10626 completed provisioning, setting DATABASE_URL, by user arawidhi.astuti@gmail.com
2022-03-03T07:25:48.256797+00:00 app[api]: Release v5 created by user arawidhi.astuti@gmail.com
2022-03-03T07:25:48.256797+00:00 app[api]: Deploy 9659528f by user arawidhi.astuti@gmail.com
2022-03-03T07:25:48.273981+00:00 app[api]: Scaled to web@1:Free by user arawidhi.astuti@gmail.com
2022-03-03T07:25:53.541617+00:00 heroku[web.1]: Starting process with command `gunicorn gettin
gstarted.wsgi`
[ ] Starting gunicorn 20.1.0
2022-03-03T07:25:55.387551+00:00 app[web.1]: [2022-03-03 07:25:55 +0000] [4] [INFO] Starting g
[ ] Listening at: http://0.0.0.0:35305 (4)
2022-03-03T07:25:55.387608+00:00 app[web.1]: [2022-03-03 07:25:55 +0000] [4] [INFO] Listening
[ ] Using worker: sync
2022-03-03T07:25:55.398723+00:00 app[web.1]: [2022-03-03 07:25:55 +0000] [9] [INFO] Using work
[ ] Booting worker with pid: 9
2022-03-03T07:25:55.435966+00:00 heroku[web.1]: State changed from starting to up
2022-03-03T07:25:55.479033+00:00 app[web.1]: [2022-03-03 07:25:55 +0000] [10] [INF
o] Booting worker with pid: 10
2022-03-03T07:26:03.000000+00:00 app[api]: Build succeeded
2022-03-03T07:26:56.439459+00:00 app[web.1]: 10.1.22.21 - - [03/Mar/2022:07:26:56
+0000] "GET / HTTP/1.1" 200 7437 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/98.0.4758.102 Safari/537.36" 7.36 (KHTML,
2022-03-03T07:26:56.441087+00:00 heroku[router]: at=info method=GET path="/" host=
stormy-depths-38300.herokuapp.com request_id=32c3af4a-5260-43d1-a7b6-caee36e60924 stormy-depth
fwd="36.72.214.64" dyno=web.1 connect=0ms service=28ms status=200 bytes=7719 proto=1.46" dyno=
col=https
2022-03-03T07:26:57.099078+00:00 app[web.1]: 10.1.22.21 - - [03/Mar/2022:07:26:57 +0000] "GET
+0000] "GET /static/lang-logo.png HTTP/1.1" 200 0 "https://stormy-depths-38300.herokuapp.com/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/98.0.4758.102 Sa
```

Uraian :

Output diatas merupakan isi dari file yang ada pada heroku.

- Menjalankan perintah yang ada didalam file Procfile , yaitu menjalankan tugas web aplikasi kita

Output :

```
Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03/python-getting-started
(main)
$
$
$
$ heroku ps
» warning: heroku update available from 7.59.2 to 7.59.3.
Free dyno hours quota remaining this month: 550h 0m (100%)
Free dyno usage for this app: 0h 0m (0%)
For more information on dyno sleeping and how to upgrade, see:
https://devcenter.heroku.com/articles/dyno-sleeping

=== web (Free): gunicorn gettingstarted.wsgi (1)
web.1: idle 2022/03/03 15:00:27 +0700 (~ 43m ago)
```

- Menggunakan virtual enviromen (venv) pada python

```
Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03/python-getting-started
(main)
$ python3 -m venv venv
Python
```

Uraian :

Virtualenv adalah tools untuk membuat lingkungan python virtual yang terisolasi. Terisolasi artinya tertutup dan tidak bisa diakses dari dunia luar.

Misal, pada hari ini kita membuat proyek aplikasi menggunakan django 1.1. Aplikasi berjalan dengan sempurna menggunakan modul versi 1.1. Lalu beberapa waktu kemudian, django rilis versi baru anggaplah versi 4.0. Kita kemudian melakukan upgrade modul. Akan tetapi, aplikasi yang sudah kita buat tidak bisa berjalan dengan modul versi baru ini, karena banyak perubahan fungsi dan lain-lain. Sementara itu, ada proyek aplikasi lain yang diharuskan menggunakan modul versi itu. Karena itu kita membutuhkan virtualenv, agar masing-masing aplikasi memiliki modulnya sendiri.

- Instalasi requirements.txt

```
Asus@DESKTOP-UQRKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03/python-getting-started
(main)
$ pip install -r requirements.txt
Collecting django
  Downloading Django-4.0.3-py3-none-any.whl (8.0 MB)
    |████████████████████████████████████████| 8.0 MB 544 kB/s
Collecting gunicorn
  Downloading gunicorn-20.1.0-py3-none-any.whl (79 kB)
    |████████████████████████████████████████| 79 kB 369 kB/s
Collecting django-heroku
  Downloading django_heroku-0.3.1-py2.py3-none-any.whl (6.2 kB)
Collecting tzdata
  Downloading tzdata-2021.5-py2.py3-none-any.whl (339 kB)
    |████████████████████████████████████████| 339 kB 504 kB/s
Collecting sqlparse<=0.2.2
  Downloading sqlparse-0.4.2-py3-none-any.whl (42 kB)
    |████████████████████████████████████████| 42 kB 74 kB/s
Collecting backports.zoneinfo
  Downloading backports.zoneinfo-0.2.1-cp38-cp38-win32.whl (36 kB)
Collecting asgiref<4,>=3.4.1
  Downloading asgiref-3.5.0-py3-none-any.whl (22 kB)
Requirement already satisfied: setuptools>=3.0 in c:\users\asus\appdata\local\programs\python\python38-32\lib\site-packages (from gunicorn->-r requirements.txt (line 2)) (41.2.0)
Collecting dj-database-url>=0.5.0
  Downloading dj_database_url-0.5.0-py2.py3-none-any.whl (5.5 kB)
Collecting whitenoise
  Downloading whitenoise-6.0.0-py3-none-any.whl (19 kB)
Collecting psycpg2
  Downloading psycpg2-2.9.3-cp38-cp38-win32.whl (995 kB)
    |████████████████████████████████████████| 995 kB 595 kB/s
Installing collected packages: tzdata, sqlparse, backports.zoneinfo, asgiref, whitenoise, psycpg2, django, dj-database-url, gunicorn, django-heroku
Successfully installed asgiref-3.5.0 backports.zoneinfo-0.2.1 dj-database-url-0.5.0 django-4.0.3 django-heroku-0.3.1 gunicorn-20.1.0 psycpg2-2.9.3 sqlparse-0.4.2 tzdata-2021.5 whitenoise-6.0.0
WARNING: You are using pip version 21.3.1; however, version 22.0.3 is available.
You should consider upgrading via the 'c:\users\asus\appdata\local\programs\python\python38-32\python.exe -m pip install --upgrade pip' command.
```

Uraian :

Penggunaan file requirements.txt ini akan mencantumkan semua dependensi Python yang diperlukan untuk sebuah proyek juga bisa untuk membuat fungsi tanpa server atau aplikasi web.

- Melihat daftar paket yang sudah terinstall

```
Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03/python-getting-started
(main)
$ pip list
Package                                Version
-----
argon2-cffi                            21.1.0
asgiref                                3.5.0
attrs                                  21.2.0
backcall                               0.2.0
backports.zoneinfo                     0.2.1
bleach                                 4.1.0
cassandra-driver                       3.25.0
certifi                                2021.5.30
cffi                                    1.15.0
chardet                                4.0.0
click                                  7.1.2
colorama                               0.4.4
cyclor                                 0.10.0
debugpy                                1.5.1
decorator                              5.1.0
defusedxml                             0.7.1
dj-database-url                        0.5.0
Django                                 4.0.3
django-heroku                          0.3.1
entrypoints                            0.3
geomet                                  0.2.1.post1
gunicorn                               20.1.0
idna                                    2.10
importlib-resources                    5.4.0
influxdb                               5.3.1
ipykernel                              6.5.0
ipython                                7.29.0
ipython-genutils                       0.2.0
ipywidgets                             7.6.5
jedi                                    0.18.0
Jinja2                                 3.0.3
jsonschema                             4.2.1
jupyter                                1.0.0
jupyter-client                         7.0.6
jupyter-console                        6.4.0
jupyter-core                           4.9.1
jupyterlab-pygments                    0.1.2
jupyterlab-widgets                     1.0.2
kiwisolver                             1.3.1
MarkupSafe                             2.0.1
```

```
matplotlib 3.4.2
matplotlib-inline 0.1.3
mistune 0.8.4
msgpack 1.0.2
mysql-connector 2.2.9
mysql-connector-python 8.0.23
nbclient 0.5.8
nbconvert 6.3.0
nbformat 5.1.3
nest-asyncio 1.5.1
notebook 6.4.5
numpy 1.18.5
oauthlib 3.1.1
opencv-python 4.5.4.58
packaging 21.2
pandas 1.2.2
pandocfilters 1.5.0
parso 0.8.2
pickleshare 0.7.5
pillow 8.2.0
pip 21.3.1
prometheus-client 0.12.0
prompt-toolkit 3.0.22
protobuf 3.15.2
psycpg2 2.9.3
pycparser 2.21
Pygments 2.10.0
pymongo 3.11.3
pyparsing 2.4.7
pysistent 0.18.0
python-dateutil 2.8.1
pytz 2021.1
pywin32 302
pywinpty 0.5.7
pyzmq 22.3.0
qtconsole 5.2.0
QtPy 1.11.2
redis 3.5.3
requests 2.25.1
requests-oauthlib 1.3.0
scipy 1.8.0
seaborn 0.11.2
Send2Trash 1.8.0
setuptools 41.2.0
six 1.15.0
sqlparse 0.4.2
```

```

pillow 8.2.0
pip 21.3.1
prometheus-client 0.12.0
prompt-toolkit 3.0.22
protobuf 3.15.2
psycopg2 2.9.3
pycparser 2.21
Pygments 2.10.0
pymongo 3.11.3
pyparsing 2.4.7
pypersistent 0.18.0
python-dateutil 2.8.1
pytz 2021.1
pywin32 302
pywinpty 0.5.7
pymq 22.3.0
qtconsole 5.2.0
QtPy 1.11.2
redis 3.5.3
requests 2.25.1
requests-oauthlib 1.3.0
scipy 1.8.0
seaborn 0.11.2
Send2Trash 1.8.0
setuptools 41.2.0
six 1.15.0
sqlparse 0.4.2
terminado 0.9.5
testpath 0.5.0
tornado 6.1
traitlets 5.1.1
tweepy 4.4.0
tzdata 2021.5
urllib3 1.26.5
wcwidth 0.2.5
webencodings 0.5.1
whitenoise 6.0.0
widgetsnbextension 3.5.2
zipp 3.6.0
WARNING: You are using pip version 21.3.1; however, version 22.0.3 is available.
You should consider upgrading via the 'c:\users\asus\appdata\local\programs\python
\python38-32\python.exe -m pip install --upgrade pip' command.

```

- Menyimpan file environment dari plugin/widget

```

Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03/python-getting-started
(main)
$ python manage.py collectstatic

129 static files copied to 'D:\Prak.TeknoCloud\Praktikum03\python-getting-started\
staticfiles', 379 post-processed.

```

```

Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03/python-getting-started (main)
$ heroku local -f Procfile.windows
» Warning: heroku update available from 7.59.2 to 7.59.3.
[OKAY] Loaded ENV .env File as KEY=VALUE Format
15:52:32 web.1 | Watching for file changes with StatReloader
15:52:32 web.1 | Performing system checks...
15:52:32 web.1 | System check identified some issues:
15:52:32 web.1 | WARNINGS:
15:52:32 web.1 | hello.Greeting: (models.W042) Auto-created primary key used when not defining a primary key type, by default 'django.db.models.AutoField'.
15:52:32 web.1 | HINT: Configure the DEFAULT_AUTO_FIELD setting or the AppConfig.default_auto_field attribute to point to a subclass of AutoField, e.g. 'django.db.models.BigAutoField'.
15:52:32 web.1 | System check identified 1 issue (0 silenced).
15:52:32 web.1 | You have 19 unapplied migration(s). Your project may not work properly until you apply the migrations for app(s): admin, auth, contenttypes, hello, sessions.
15:52:32 web.1 | Run 'python manage.py migrate' to apply them.
15:52:32 web.1 | March 03, 2022 - 15:52:32
15:52:32 web.1 | Django version 4.0.3, using settings 'gettingstarted.settings'
15:52:32 web.1 | Starting development server at http://0.0.0.0:5000/
15:52:32 web.1 | Quit the server with CTRL-BREAK.
[WARN] Interrupted by User
[DONE] Killing all processes with signal SIGINT
^CTerminate batch job (Y/N)? ^CY

Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03/python-getting-started (main)
$ heroku local
» Warning: heroku update available from 7.59.2 to 7.59.3.
[OKAY] Loaded ENV .env File as KEY=VALUE Format
15:54:42 web.1 | Traceback (most recent call last):
15:54:42 web.1 |   File "c:\users\asus\appdata\local\programs\python\python38-32\lib\runpy.py", line 193, in _run_module_as_main
15:54:42 web.1 |     return _run_code(code, main_globals, None,
15:54:42 web.1 |   File "c:\users\asus\appdata\local\programs\python\python38-32\lib\runpy.py", line 86, in _run_code
15:54:42 web.1 |     exec(code, run_globals)
15:54:42 web.1 |   File "C:\Users\Asus\AppData\Local\Programs\Python\Python38-32\Scripts\gunicorn.exe\_main_.py", line 4, in <module>
15:54:42 web.1 |   File "c:\users\asus\appdata\local\programs\python\python38-32\lib\site-packages\gunicorn\app\wsgiapp.py", line 9, in <module>
15:54:42 web.1 |     from gunicorn.app.base import Application
15:54:42 web.1 |   File "c:\users\asus\appdata\local\programs\python\python38-32\lib\site-packages\gunicorn\app\base.py", line 11, in <module>
15:54:42 web.1 |     from gunicorn import util
15:54:42 web.1 |   File "c:\users\asus\appdata\local\programs\python\python38-32\lib\site-packages\gunicorn\util.py", line 8, in <module>
15:54:42 web.1 |     import fcntl
15:54:42 web.1 | ModuleNotFoundError: No module named 'fcntl'
[DONE] Killing all processes with signal SIGINT

```

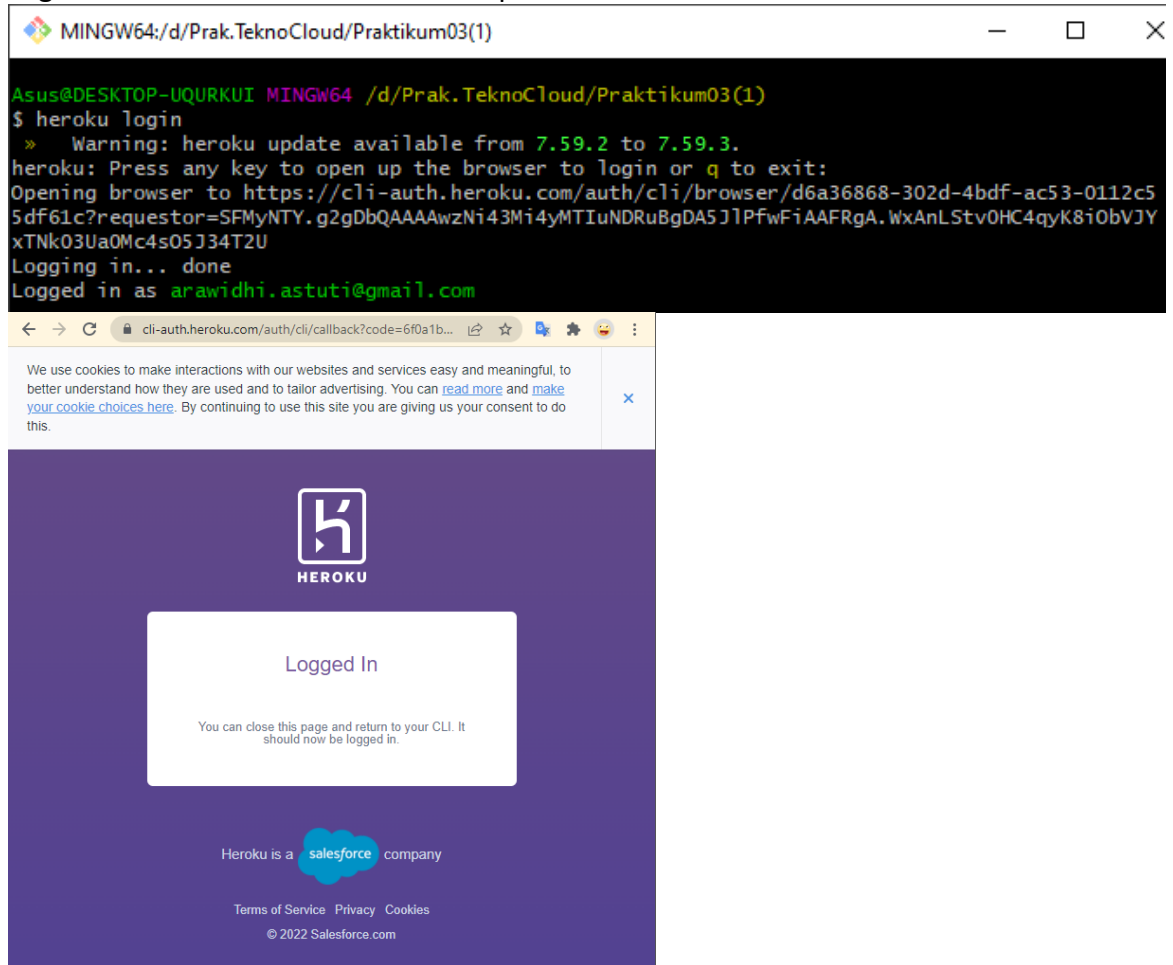

Tugas

1. Mengerjakan deployment ke PaaS di Heroku untuk PHP

Uraian :

Untuk pembahasan langkah-langkahnya sama seperti pada **Latihan**, namun yang membedakannya adalah pada Latihan menggunakan bahasa Python, sedangkan pada **Tugas** ini menggunakan PHP.

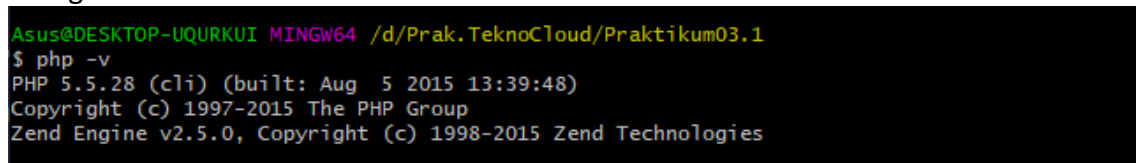
- Login heroku melalui Command Prompt



Uraian :

Kemudian mulai login pada Heroku melalui Command Prompt, jika login berhasil maka akan terdeteksi email kita dan mulai mengarahkannya pada tab Heroku seperti output diatas.

- Mengecek versi PHP



Uraian :

Tampilan diatas merupakan versi php yang saat ini digunakan.

- Melakukan perintah untuk membuat salinan repository lokal

```
Asus@DESKTOP-UQRKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03.1
$ git clone https://github.com/heroku/php-getting-started.git
Cloning into 'php-getting-started'...
remote: Enumerating objects: 201, done.
remote: Counting objects: 100% (3/3), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 201 (delta 0), reused 1 (delta 0), pack-reused 198
Receiving objects: 72% (145/201)
Receiving objects: 100% (201/201), 59.28 KiB | 731.00 KiB/s, done.
Resolving deltas: 100% (86/86), done.
```

Uraian :

Dalam hal ini, sebelum kita mengcloning heroku pada github kita wajib membuat salinan repository terlebih dahulu. Pada source code diatas, saya membuat sebuah folder pada direktori D dengan nama Praktikum03.1 , setelah itu mulai mengcloningnya pada gitbash.

- Mulai melakukan cd php- getting-started

```
Asus@DESKTOP-UQRKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03.1
$ cd php-getting-started
```

This PC > Local Disk (D:) > Prak.TeknoCloud > Praktikum03.1 > php-getting-started >

Name	Date modified	Type	Size
.git	03/03/2022 19.19	File folder	
web	03/03/2022 19.19	File folder	
.gitignore	03/03/2022 19.19	Text Document	1 KB
app	03/03/2022 19.19	JSON File	1 KB
composer	03/03/2022 19.19	JSON File	1 KB
composer.lock	03/03/2022 19.19	LOCK File	36 KB
Procfile	03/03/2022 19.19	File	1 KB
README	03/03/2022 19.19	MD File	1 KB

Uraian :

Setelah berhasil melakukan getting-started, pada salinan repository lokal kita akan terdapat penambahan beberapa file dari getting-started.

- Mulai membuat proyek pada Heroku melalui php

```
Asus@DESKTOP-UQRKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03.1/php-getting-started (main)
$ heroku create
» Warning: heroku update available from 7.59.2 to 7.59.3.
Creating app... done, • limitless-dawn-20872
https://limitless-dawn-20872.herokuapp.com/ | https://git.heroku.com/limitless-dawn-20872.git
```

Uraian :

Jika kita ingin membuat sebuah proyek namun melalui php, kita bisa langsung melakukannya dengan cara yaitu heroku create. Apabila berhasil dilakukan, maka akan mendapatkan 2 link yaitu link pada heroku dan github.

<https://limitless-dawn-20872.herokuapp.com/>
<https://git.heroku.com/limitless-dawn-20872.git>

- Mengirimkan perubahan file setelah di commit ke remote repository

```
Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03.1/php-getting-started (main)
$ git push heroku main
Enumerating objects: 187, done.
Counting objects: 100% (187/187), done.
Delta compression using up to 4 threads
Compressing objects: 100% (96/96), done.
Writing objects: 100% (187/187), 51.89 KiB | 1.40 MiB/s, done.
Total 187 (delta 77), reused 187 (delta 77), pack-reused 0
remote: Compressing source files... done.
remote: Building source:
remote:
remote: -----> Building on the Heroku-20 stack
remote: -----> Determining which buildpack to use for this app
remote: -----> PHP app detected
remote: -----> Bootstrapping...
remote: -----> Preparing platform package installation...
remote: NOTICE: No runtime required in composer.json; requirements
remote: from dependencies in composer.lock will be used for selection
remote: -----> Installing platform packages...
remote: - apache (2.4.52)
remote: - php (7.4.28)
remote: - composer (2.2.7)
remote: - nginx (1.20.2)
remote:
remote: ! WARNING: Your app's PHP version is no longer actively maintained
remote: !
remote: ! Only security updates will be provided for your PHP version
remote: ! series by the PHP Group until its end-of-life on 2022-11-28.
remote: !
remote: ! It is strongly recommended you update your app to a version of
remote: ! PHP with "active support" status immediately to ensure you get
remote: ! the latest bugfixes and security updates each time you deploy.
remote: !
remote: ! You may check the list of versions supported by the PHP Group
remote: ! and their EOL dates here: http://php.net/supported-versions.php
remote: !
remote: ! For a list of supported runtimes & extensions on Heroku, please
remote: ! refer to: https://devcenter.heroku.com/articles/php-support
remote:
```

```

remote: ----> Installing dependencies...
remote: Composer version 2.2.7 2022-02-25 11:12:27
remote: Installing dependencies from lock file
remote: Verifying lock file contents can be installed on current platform.
remote: Package operations: 13 installs, 0 updates, 0 removals
remote:   - Downloading psr/log (1.0.2)
remote:   - Downloading monolog/monolog (1.22.1)
remote:   - Downloading symfony/routing (v3.2.7)
remote:   - Downloading symfony/polyfill-mbstring (v1.23.1)
remote:   - Downloading symfony/http-foundation (v3.4.47)
remote:   - Downloading symfony/event-dispatcher (v3.2.7)
remote:   - Downloading symfony/debug (v3.2.7)
remote:   - Downloading symfony/http-kernel (v3.2.7)
remote:   - Downloading pimple/pimple (v3.0.2)
remote:   - Downloading silex/silex (v2.0.4)
remote:   - Downloading twig/twig (v2.3.0)
remote:   - Downloading symfony/twig-bridge (v3.2.7)
remote:   - Installing psr/log (1.0.2): Extracting archive
remote:   - Installing monolog/monolog (1.22.1): Extracting archive
remote:   - Installing symfony/routing (v3.2.7): Extracting archive
remote:   - Installing symfony/polyfill-php70 (v1.20.0)
remote:   - Installing symfony/polyfill-mbstring (v1.23.1): Extracting archive
remote:   - Installing symfony/http-foundation (v3.4.47): Extracting archive
remote:   - Installing symfony/event-dispatcher (v3.2.7): Extracting archive
remote:   - Installing symfony/debug (v3.2.7): Extracting archive
remote:   - Installing symfony/http-kernel (v3.2.7): Extracting archive
remote:   - Installing pimple/pimple (v3.0.2): Extracting archive
remote:   - Installing silex/silex (v2.0.4): Extracting archive
remote:   - Installing twig/twig (v2.3.0): Extracting archive
remote:   - Installing symfony/twig-bridge (v3.2.7): Extracting archive
remote: Generating optimized autoload files
remote: 3 packages you are using are looking for funding.
remote: Use the 'composer fund' command to find out more!
remote: ----> Preparing runtime environment...
remote: ----> Checking for additional extensions to install...
remote: ----> Discovering process types
remote: Procfile declares types -> web
remote:
remote: ----> Compressing...
remote: Done: 15.5M
remote: ----> Launching...
remote: Released v3
remote: https://limitless-dawn-20872.herokuapp.com/ deployed to Heroku
remote:
remote: Verifying deploy... done.
To https://git.heroku.com/limitless-dawn-20872.git
 * [new branch]      main -> main

```

Uraian :

Setelah berhasil membuat proyek baru , langkah selanjutnya adalah melakukan git push untuk mengirimkan perubahan file proyek yang nantinya akan dibuat.

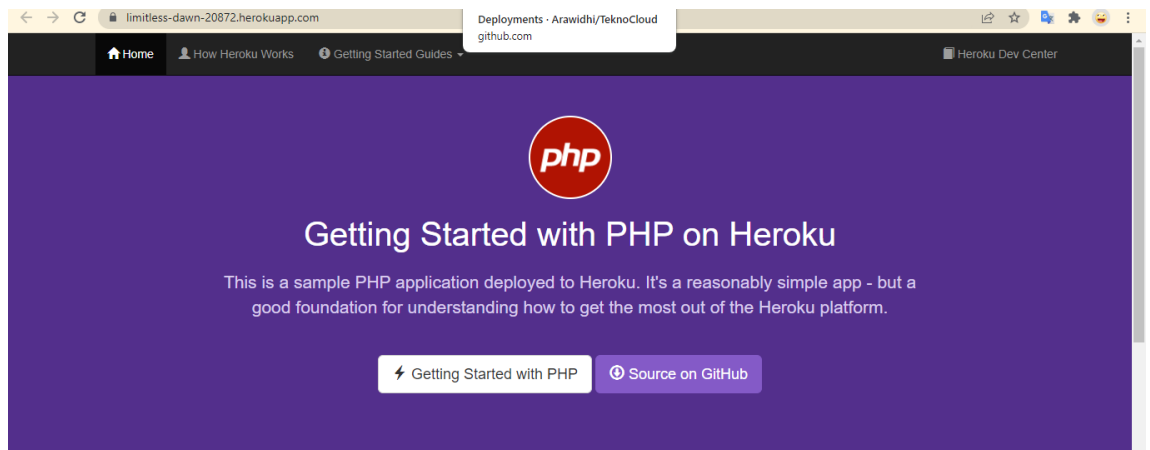
- Membuka halaman Heroku

```

Asus@DESKTOP-UQRKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03.1/php-getting-started (main)
$ heroku ps:scale web=1
» Warning: heroku update available from 7.59.2 to 7.59.3.
Scaling dynos... done, now running web at 1:Free

Asus@DESKTOP-UQRKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03.1/php-getting-started (main)
$ heroku open
» Warning: heroku update available from 7.59.2 to 7.59.3.
Asus@DESKTOP-UQRKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03.1/php-getting-started (main)
$

```



Uraian :

Tampilan output diatas merupakan halaman awal untuk memulai membuat proyek yang dibuat dan dilakukan pada python sebelumnya.

- Membaca file yang ada pada heroku

```
Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03.1/php-getting-started (main)
$ heroku logs --tail
» Warning: heroku update available from 7.59.2 to 7.59.3.
2022-03-03T12:26:39.590725+00:00 app[api]: Initial release by user arawidhi.astuti@gmail.com
2022-03-03T12:26:39.590725+00:00 app[api]: Release v1 created by user arawidhi.astuti@gmail.co
2022-03-03T12:26:41.448320+00:00 app[api]: Release v2 created by user arawidhi.astuti@gmail.co
2022-03-03T12:26:41.448320+00:00 app[api]: Enable Logplex by user arawidhi.astuti@gmail.com
2022-03-03T12:29:54.000000+00:00 app[api]: Build started by user arawidhi.astuti@gmail.com
2022-03-03T12:30:03.000000+00:00 app[api]: Build succeeded
2022-03-03T12:30:03.330304+00:00 app[api]: Deploy 3b59891c by user arawidhi.astuti@gmail.com
2022-03-03T12:30:03.330304+00:00 app[api]: Release v3 created by user arawidhi.astuti@gmail.co
2022-03-03T12:30:03.350937+00:00 app[api]: Scaled to web@1:Free by user arawidhi.astuti@gmail.
com
2022-03-03T12:30:05.004423+00:00 heroku[web.1]: Starting process with command `vendor/bin/heroku-
ku-php-apache2 web/`
2022-03-03T12:30:08.977825+00:00 app[web.1]: DOCUMENT_ROOT changed to 'web/'
2022-03-03T12:30:09.191625+00:00 app[web.1]: Detected 536870912 Bytes of RAM
2022-03-03T12:30:09.283941+00:00 app[web.1]: PHP memory_limit is 128M Bytes
2022-03-03T12:30:09.311711+00:00 app[web.1]: Starting php-fpm with 4 workers...
2022-03-03T12:30:09.644553+00:00 app[web.1]: Starting httpd...
2022-03-03T12:30:10.092016+00:00 heroku[web.1]: State changed from starting to up
2022-03-03T12:34:12.139928+00:00 app[web.1]: [2022-03-03 12:34:12] app.INFO: Matched route "{r
oute}": {"route":"GET","route_parameters":{"_controller":"[object] (Closure: {})", "_route":"G
ET"},"request_uri":"http://limitless-dawn-20872.herokuapp.com/","method":"GET"} []
2022-03-03T12:34:12.141434+00:00 app[web.1]: [2022-03-03 12:34:12] app.DEBUG: > GET / [] []
2022-03-03T12:34:12.141780+00:00 app[web.1]: [2022-03-03 12:34:12] app.DEBUG: logging output.
[] []
2022-03-03T12:34:12.170901+00:00 app[web.1]: [03-Mar-2022 12:34:12 UTC] PHP Deprecated: Unpar
enthesized 'a ? b : c ? d : e' is deprecated. Use either '(a ? b : c) ? d : e' or 'a ? b : (c
? d : e)' in /app/vendor/twig/twig/lib/Twig/Node.php on line 42
2022-03-03T12:34:12.186041+00:00 heroku[routel]: at=info method=GET path="/" host=limitless-da
wn-20872.herokuapp.com request_id=a8a3d519-4b98-499e-9cc7-f82b5b4dfd6d fwd="36.72.212.44" dyno
=web.1 connect=0ms service=181ms status=200 bytes=6997 protocol=https
2022-03-03T12:34:12.186142+00:00 app[web.1]: 10.1.13.66 - - [03/Mar/2022:12:34:12 +0000] "GET
/ HTTP/1.1" 200 6791 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML,
like Gecko) Chrome/98.0.4758.102 Safari/537.36
2022-03-03T12:34:12.186894+00:00 app[web.1]: [2022-03-03 12:34:12] app.DEBUG: < 200 [] []
2022-03-03T12:34:12.712689+00:00 heroku[routel]: at=info method=GET path="/stylesheets/main.cs
s" host=limitless-dawn-20872.herokuapp.com request_id=f523a3d2-b406-435a-b19e-6b7b46ee0989 fwd
="36.72.212.44" dyno=web.1 connect=0ms service=6ms status=200 bytes=836 protocol=https
2022-03-03T12:34:12.719839+00:00 app[web.1]: 10.1.13.66 - - [03/Mar/2022:12:34:12 +0000] "GET
/stylesheets/main.css HTTP/1.1" 200 605 "https://limitless-dawn-20872.herokuapp.com/download
lang-logo.png" host=limitless-dawn-20872.herokuapp.com request_id=43f3b1a9-17b5-4a8.0.4758.102
cl-a798-342c93f40b5d fwd="36.72.212.44" dyno=web.1 connect=0ms service=3ms status=
```

- Menjalankan perintah yang ada didalam file Procfile , yaitu menjalankan tugas web aplikasi kita

Output :

```
Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03.1/php-getting-started (main)
$ heroku ps
» Warning: heroku update available from 7.59.2 to 7.59.3.
Free dyno hours quota remaining this month: 550h 0m (100%)
Free dyno usage for this app: 0h 0m (0%)
For more information on dyno sleeping and how to upgrade, see:
https://devcenter.heroku.com/articles/dyno-sleeping

=== web (Free): vendor/bin/heroku-php-apache2 web/ (1)
web.1: up 2022/03/03 19:30:10 +0700 (~ 7m ago)

Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03.1/php-getting-started (main)
$ heroku ps:scale web=0
» Warning: heroku update available from 7.59.2 to 7.59.3.
Scaling dynos... done, now running web at 0:Free

Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03.1/php-getting-started (main)
$ heroku ps:scale web=1
» Warning: heroku update available from 7.59.2 to 7.59.3.
Scaling dynos... done, now running web at 1:Free
```

- Mengecek composer version

```
Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03.1/php-getting-started (main)
$ composer -V
Composer version 2.2.7 2022-02-25 11:12:27
```

- Memulai update-an composer

```
Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03.1/php-getting-started (main)
$ composer update
Loading composer repositories with package information
Updating dependencies
Your requirements could not be resolved to an installable set of packages.

Problem 1
- twig/twig[v2.0.0, ..., v2.12.5] require php ^7.0 -> your php version (5.5.28) does not satisfy that requirement.
- twig/twig[v2.13.0, ..., v2.14.11] require php >=7.1.3 -> your php version (5.5.28) does not satisfy that requirement.
- twig/twig[v2.14.0, ..., v2.14.8] require php >=7.2.5 -> your php version (5.5.28) does not satisfy that requirement.
- Root composer.json requires twig/twig ^2.0 -> satisfiable by twig/twig[v2.0.0, ..., v2.14.11].
```

Uraian :

Pada saat proses pengupdate-an composer, terdapat notifikasi bahwa “persyaratan tidak dapat diselesaikan ke kumpulan paket yang dapat diinstal”. Hal ini dikarenakan untuk versi php yang digunakan masih dibawah kriteria yang diminta yaitu (5.5.28), sedangkan untuk menjalankan composer update memerlukan php dengan versi 7 ke atas.

- Menyebarkan perubahan lokal ke aplikasi melalui Heroku. Sebagai contoh, memodifikasi aplikasi untuk menambahkan ketergantungan tambahan (perpustakaan Cowsay) dan kode untuk menggunakannya.

```

Asus@DESKTOP-UQURKUI MINGW64 /d/Prak.TeknoCloud/Praktikum03.1/php-getting-started (main)
$ composer require alrik11es/cowsayphp
Using version ^1.0 for alrik11es/cowsayphp
./composer.json has been updated
Running composer update alrik11es/cowsayphp
Loading composer repositories with package information
Updating dependencies
Your requirements could not be resolved to an installable set of packages.

Problem 1
- twig/twig is locked to version v2.3.0 and an update of this package was not requested.
- twig/twig v2.3.0 requires php ^7.0 -> your php version (5.5.28) does not satisfy that requirement.
Problem 2
- symfony/polyfill-mbstring v1.23.1 requires php >=7.1 -> your php version (5.5.28) does not satisfy that requirement.
- silex/silex v2.0.4 requires symfony/http-foundation ~2.8|^3.0 -> satisfiable by symfony/http-foundation[v3.4.47].
- symfony/http-foundation v3.4.47 requires symfony/polyfill-mbstring ~1.1 -> satisfiable by symfony/polyfill-mbstring[v1.23.1].
- silex/silex is locked to version v2.0.4 and an update of this package was not requested.

You can also try re-running composer require with an explicit version constraint, e.g. "composer require alrik11es/cowsayphp:*" to figure out if any version is installable, or "composer require alrik11es/cowsayphp:^2.1" if you know which you need.

Installation failed, reverting ./composer.json and ./composer.lock to their original content.

```

Uraian :

Hal ini serupa dengan langkah sebelumnya, dimana pada saat pembaruan komposer memuat repositori komposer dengan informasi paket, dan memperbarui dependensi, persyaratan tidak dapat diselesaikan ke kumpulan paket yang dapat diinstal.

- twig/twig[v2.0.0, ..., v2.12.5] memerlukan php ^7.0 -> versi php saat ini (5.5.28) tidak memenuhi persyaratan itu.
- twig/twig[v2.13.0, ..., v2.14.11] memerlukan php >=7.1.3 -> versi php saat ini (5.5.28) tidak memenuhi persyaratan itu.
- twig/twig[v2.14.0, ..., v2.14.8] memerlukan php >=7.2.5 -> versi php saat ini (5.5.28) tidak atau memenuhi persyaratan itu.
- Root composer.json membutuhkan twig/twig ^2.0 -> satisfiable by twig/twig[v2.0.0, ..., v2.14.11].

Pembaharuan versi PHP merupakan hal yang sangat perlu diperhatikan dan hati-hati didalam melakukannya, karena jika proses update sudah terlanjur dilakukan pada php.exe namun ternyata gagal, kemungkinan besar resiko kehilangan data dapat terjadi.

BAB II

KESIMPULAN

Pada praktikum kali ini dapat disimpulkan bahwa Heroku merupakan situs penyedia server callback layaknya situs api.ai, namun untuk Heroku ini diperuntukan untuk orang yang sudah mahir dengan kode php, python dll. Berbeda dengan api.ai yang hanya perlu memasukan kata kunci saja, di Heroku pada saat menjalankannya harus menambahkan dengan tambahan script yang biasanya disimpan di Github.

Jika ingin deploy PHP ke Heroku, versi yang dibutuhkan haruslah menggunakan versi yang terbaru saat ini. Minimal 7+, karena jika masih menggunakan PHP dengan versi 5 akan sulit nantinya untuk melakukan proses deploy.

BAB III

DAFTAR PUSTAKA

<https://inwepo.co/cara-menghubungkan-github-dengan-heroku/>
<https://maniacku.blogspot.com/2020/04/cara-deploy-project-ke-heroku.html>
<https://www.petanikode.com/python-virtualenv/>
<https://ichi.pro/id/python-how-buat-requirement-txt-menggunakan-pipenv-48527689724847>