

Model Deployment Bagian - II

19 April 2024



Materi Hari Ini



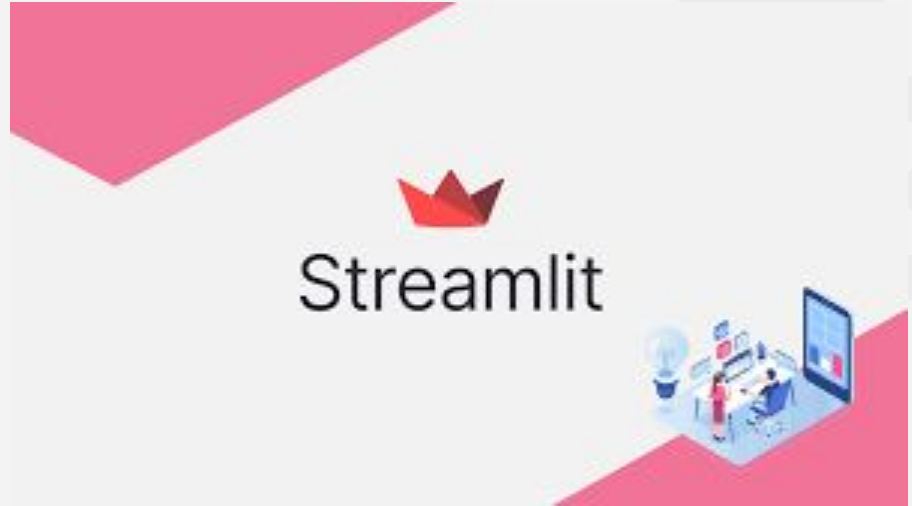
Kita akan mempelajari antara lain:

1. Pengenalan Streamlit dan Karakteristiknya.
2. Hands-On Coding:
Deploy ML model dengan Streamlit



Pengantar Streamlit

Apa dan Bagaimana



Streamlit



**“open-source berbasis Python
yang menyederhanakan
pembuatan pembuatan aplikasi
web yang interaktif dan
dashboard data”**



Streamlit



No	Karakteristik Streamlit
1	Pengembangan yang sederhana, Streamlit bertujuan untuk merampingkan proses pembuatan aplikasi web dengan menyediakan API yang intuitif dan sederhana.
2	Prototipe yang cepat, kita dapat membangun prototype dengan cepat dan dapat melihat hasilnya dengan perubahan atau penambahan code Python.
3	Interaktif Widget, Streamlit menawarkan beberapa fitur seperti slider, dropdown, checkbox dan button di dalamnya.
4	Integrasi dengan Machine Learning libraries , Streamlit terintegrasi secara sederhana dengan Python libraries yang digunakan di dalam workflow machine learning dan data science seperti Pandas, NumPy, Scikit-learn, dan TensorFlow.



Karakter Streamlit



st.title('Welcome to Machine Learning')

st.subheader('ML

Section')

st.expander('Attribute

Info')

st.markdown(YOUR_TEXT)

Welcome to Machine Learning

ML section

Attribute Info

- Department: Sales & Marketing, Operations, Technology, Analytics, R&D, Procurement, Finance, HR, Legal
- Region: region 1 - region 34
- Education: Below Secondary, Bachelor's, Master's & above
- Gender: Male and Female
- Recruitment Channel: Referred, Sourcing, Others
- No of Training: 1-10
- Age: 10-60
- Previous Year Rating: 1-5
- Length of Service: 1-37 Month
- Awards Won: 1. Yes, 0. No
- Avg Training Score: 0-100

Karakter Streamlit



st.selectbox

```
st.selectbox('Department', ["Sales & Marketing", "Operations", "Technology",  
                             "Analytics", "R&D", "Procurement", "Finance", "HR",  
                             "Legal"])
```

Sales & Marketing ▾

- Sales & Marketing
- Operations
- Technology
- Analytics
- R&D
- Procurement
- Finance

st.number_input

```
st.number_input("Age", 10, 60)
```

Age

10 - +

st.radio

```
st.radio('Gender', ['m', 'f'])
```

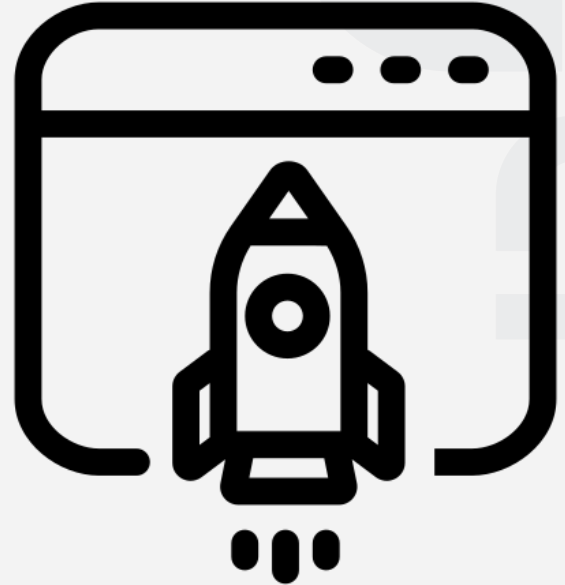
Gender

☒ m

☐ f

Hands-On Coding

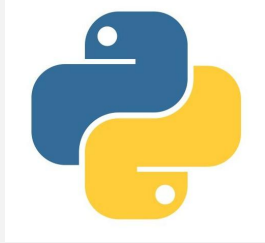
ML Deployment with Streamlit



Tools for ML Deployment in Streamlit Demo



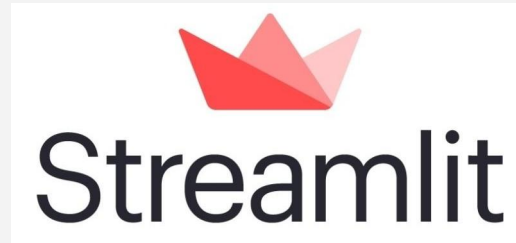
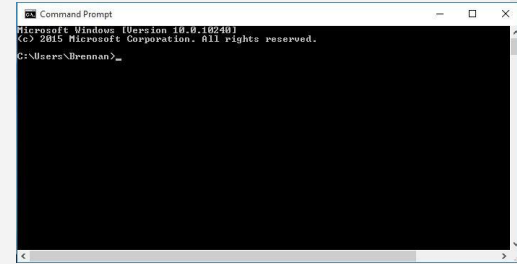
Python



NGROK



Command Line



Implementasi

- Code ML Deployment with Streamlit
- Hands-on Coding in Google Colab

```
31 def __init__(self, settings):
32     self.file = None
33     self.fingerprints = set()
34     self.logdupes = True
35     self.debug = debug
36     self.logger = logging.getLogger(__name__)
37     if path:
38         self.file = open(os.path.join(path, "requests.log"),
39                         "a")
40         self.file.seek(0)
41         self.fingerprints.update(s.request for s in self.requests)
42
43 @classmethod
44 def from_settings(cls, settings):
45     debug = settings.getbool("DEBUG_LOGGING")
46     return cls(job_dir(settings), debug)
47
48 def request_seen(self, request):
49     fp = self.request_fingerprint(request)
50     if fp in self.fingerprints:
51         return True
52     self.fingerprints.add(fp)
53     if self.file:
54         self.file.write(fp + os.linesep)
55
56 def request_fingerprint(self, request):
57     return request_fingerprint(request)
```





Thank You

