BATCH : B150 Data Science

LESSON : Deployment

DATE : 16.09.2023

SUBJECT : Streamlit

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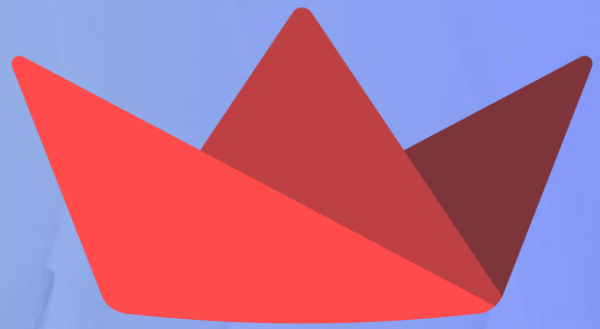
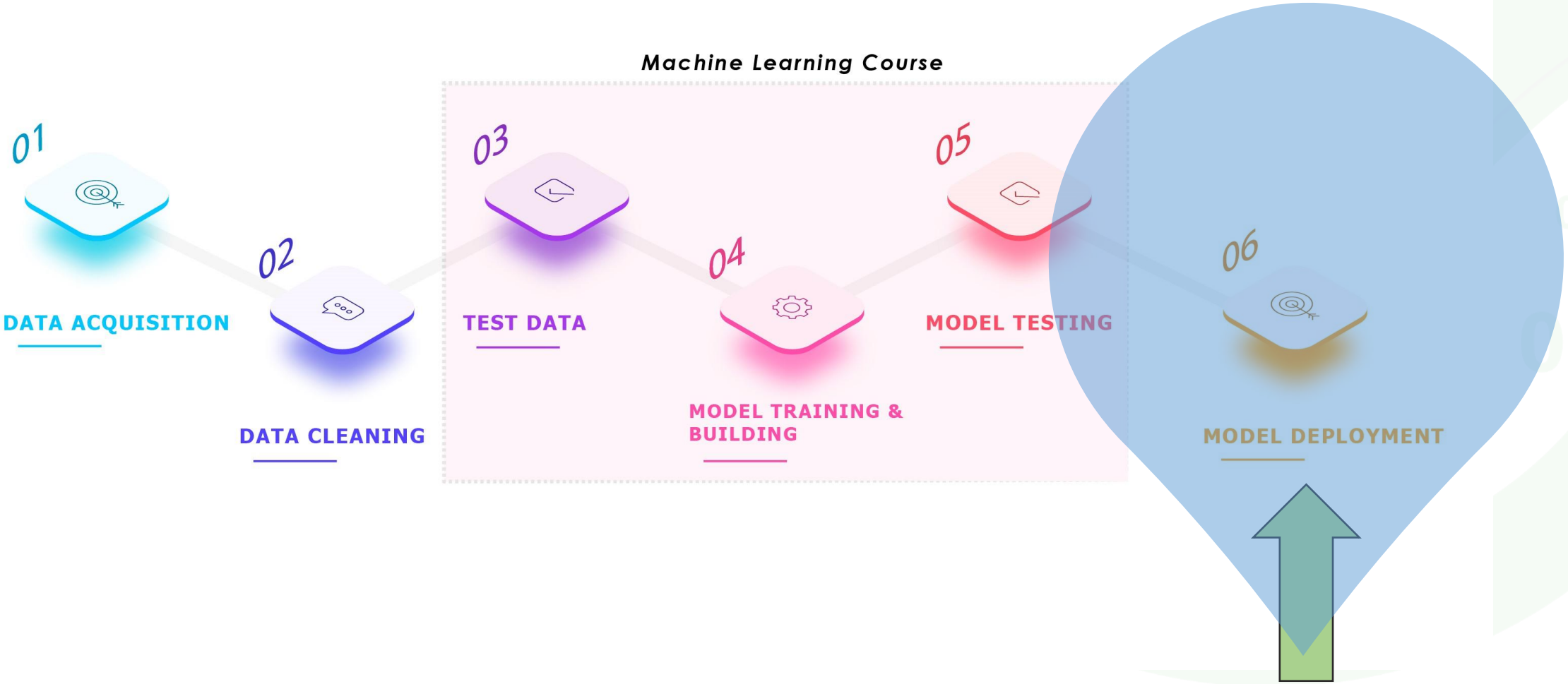
Streamlit ile Deployment



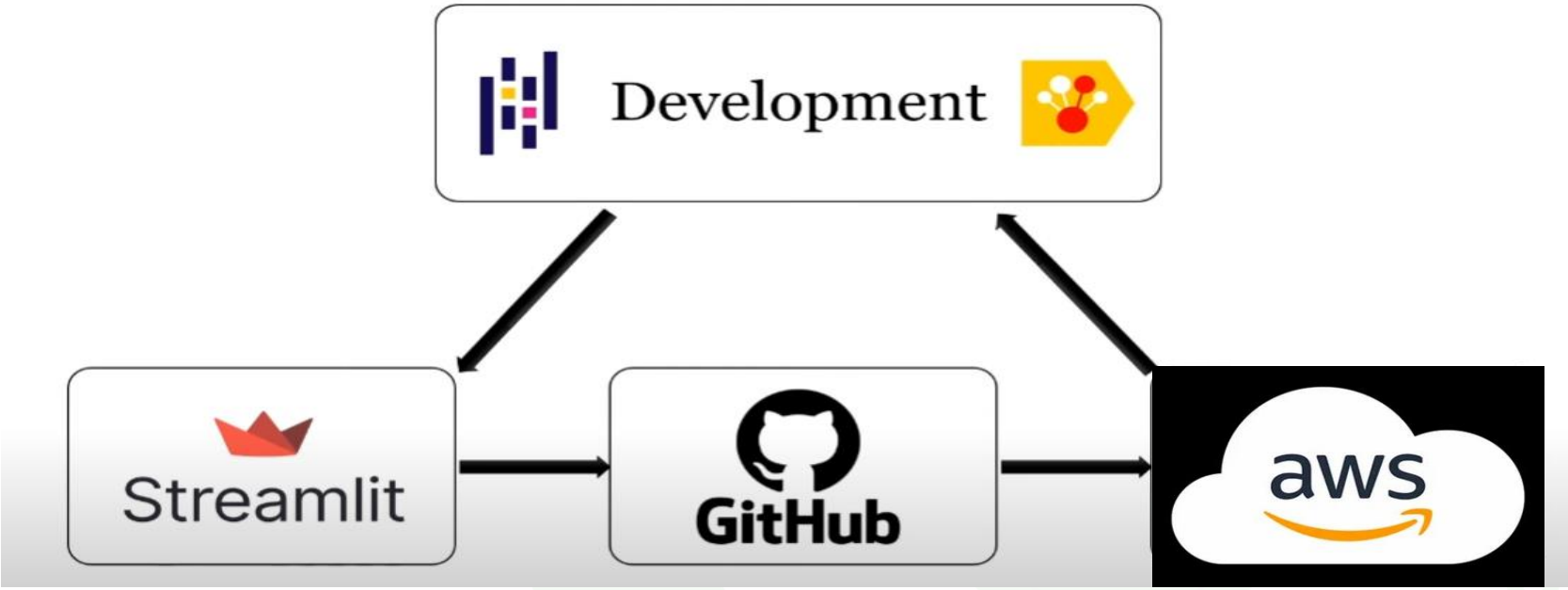
Run Navigation...

Where are we?



Streamlit Nedir ?

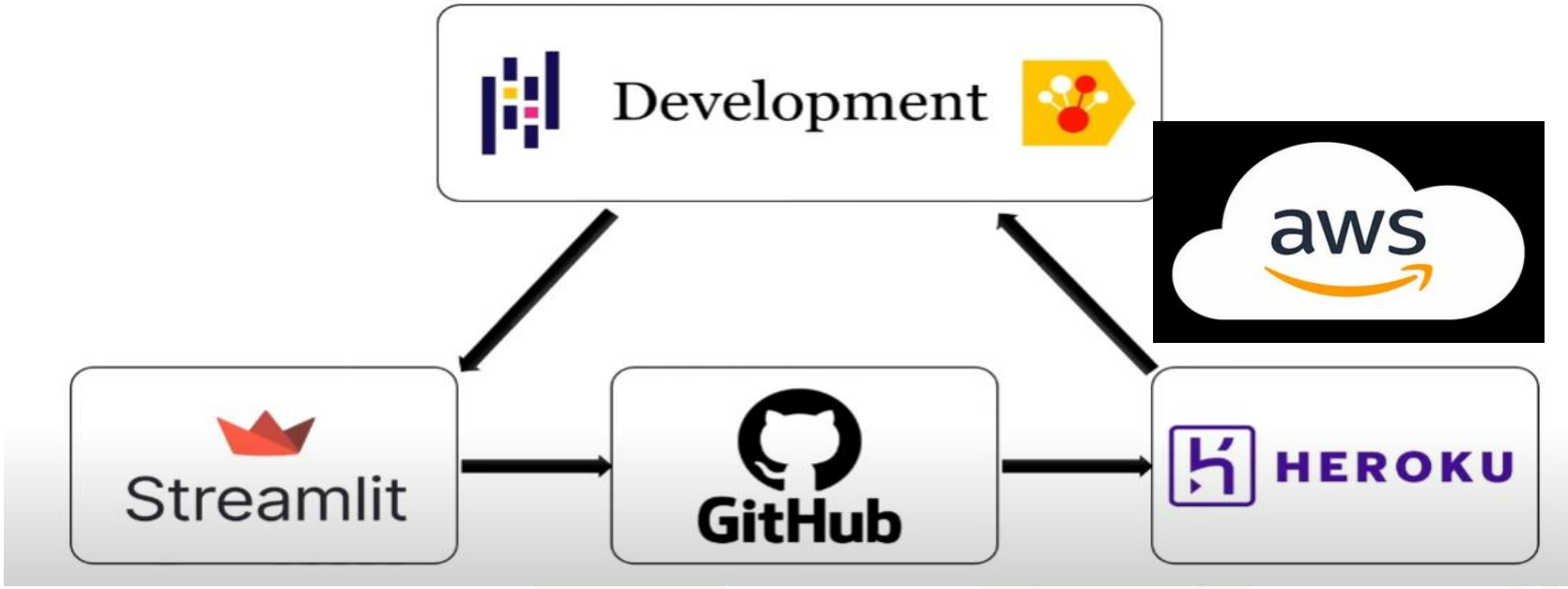
- **Streamlit nedir ?**



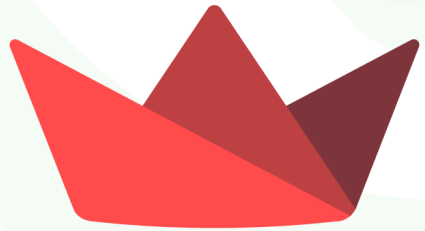
- Örnek bir streamlit sayfası görelim
- 2. örnek

Streamlit Nedir ?

- **Streamlit nedir ?**



- Örnek bir streamlit sayfası görelim
- 2. örnek



2.Örnek için video dosyası

misraturp-my-awesome-streamlit-front-end-main-1z41m3.streamlit.app

Translate Gakademi DataStorytelling ChatGPT DeepL Translate FullPrgrmlr Tableau – Melis Tur... drawio - diagrams.... YTMP3 DS myGitHub NewWorld Python-Stat data science

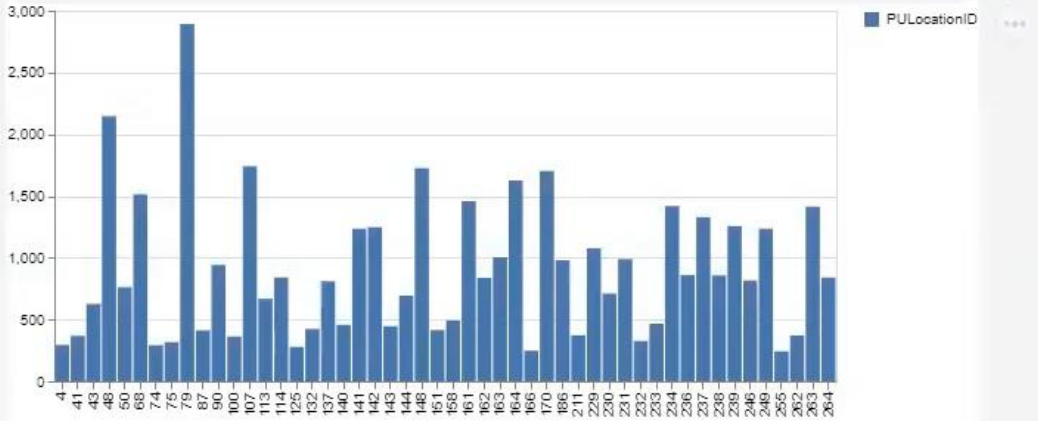
Welcome to my awesome data science project!

In this project I look into the transactions of taxis in NYC. ...

NYC taxi dataset

I foudn this dataset on blablabla.com, ...

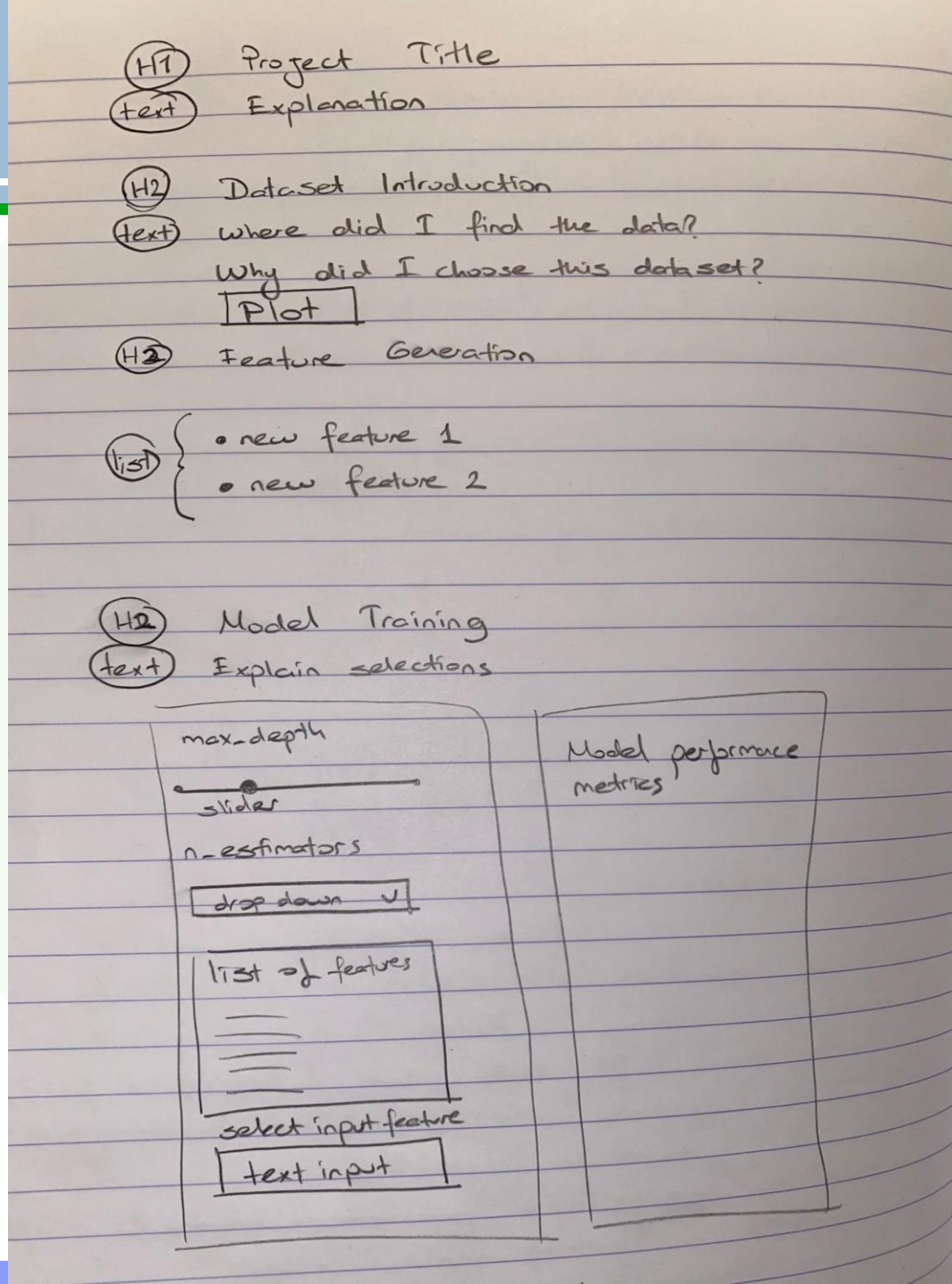
Pick-up location ID distribution on the NYC dataset



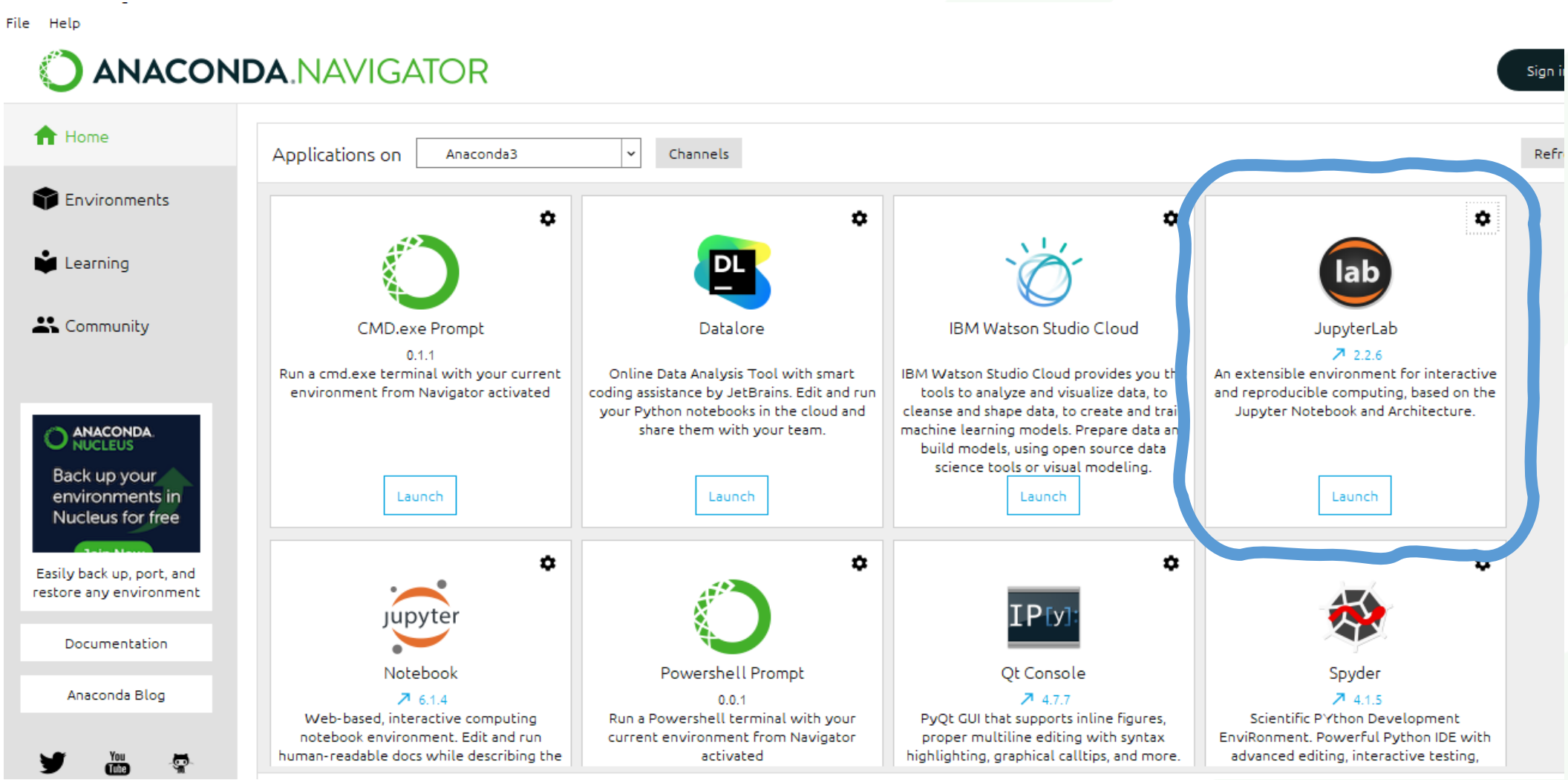
Tasarım

- Örnek bir eskiz tasarım sayfası

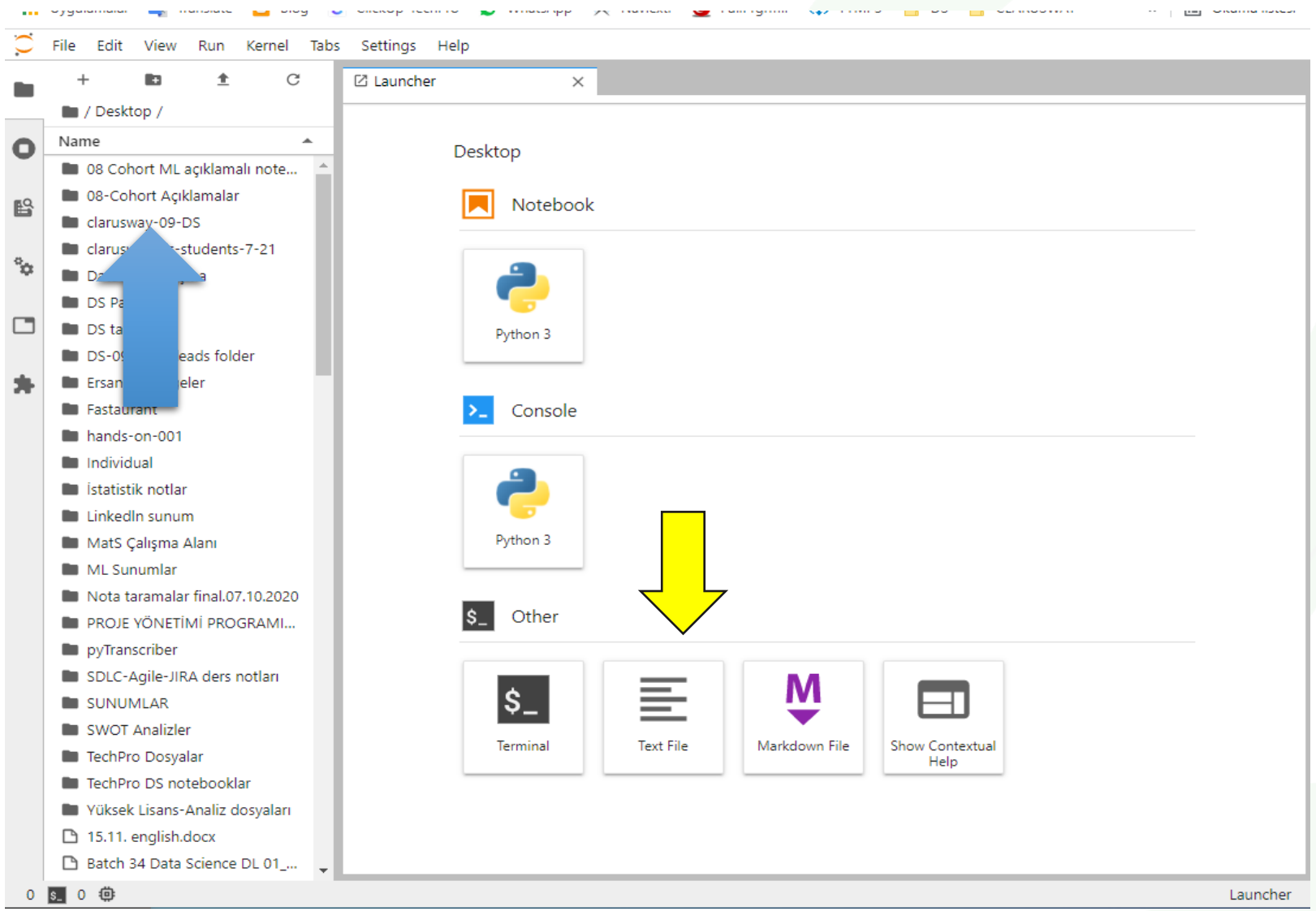
- Sayfayı nasıl oluşturabiliriz ?
- Sayfayı hayal edin…



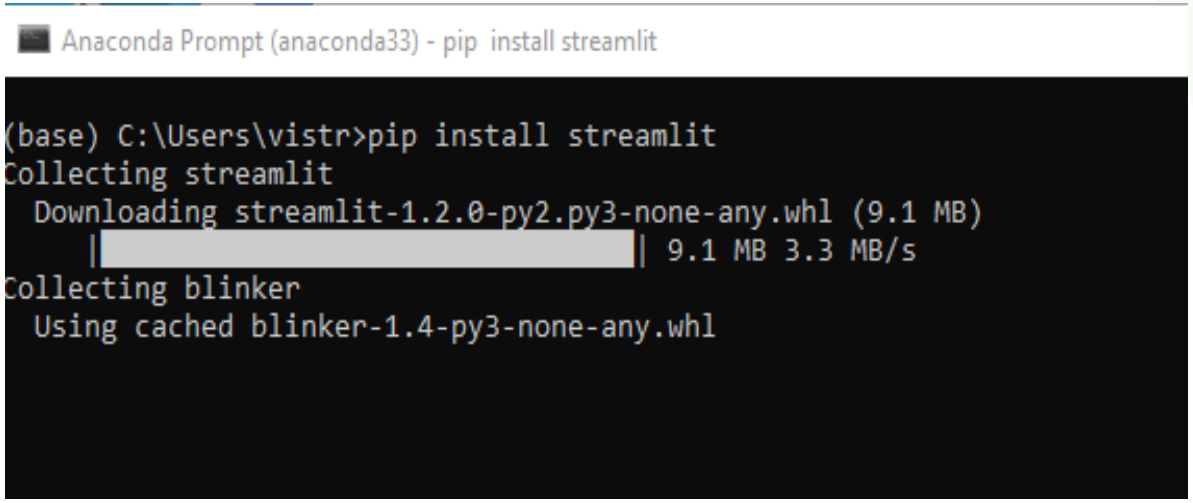
İlk Kurulum..


File Help
ANACONDA.NAVIGATOR
Sign i
Home
Environments
Learning
Community
Applications on
Anaconda3
Channels
Refr
CMD.exe Prompt
0.1.1
Run a cmd.exe terminal with your current environment from Navigator activated
Launch
Datalore
Online Data Analysis Tool with smart coding assistance by JetBrains. Edit and run your Python notebooks in the cloud and share them with your team.
Launch
IBM Watson Studio Cloud
IBM Watson Studio Cloud provides you th tools to analyze and visualize data, to cleanse and shape data, to create and trai machine learning models. Prepare data an build models, using open source data science tools or visual modeling.
Launch
JupyterLab
2.2.6
An extensible environment for interactive and reproducible computing, based on the Jupyter Notebook and Architecture.
Launch
ANACONDA. NUCLEUS
Back up your environments in Nucleus for free
Easily back up, port, and restore any environment
Documentation
Anaconda Blog
Notebook
6.1.4
Web-based, interactive computing notebook environment. Edit and run human-readable docs while describing the
Powershell Prompt
0.0.1
Run a Powershell terminal with your current environment from Navigator activated
Qt Console
4.7.7
PyQt GUI that supports inline figures, proper multiline editing with syntax highlighting, graphical calltips, and more.
Spyder
4.1.5
Scientific PYthon Development EnviRonment. Powerful Python IDE with advanced editing, interactive testing,

Arayüz..


File Edit View Run Kernel Tabs Settings Help
/ Desktop /
Name
08 Cohort ML açıklamalı note...
08-Cohort Açıklamalar
clarusway-09-DS
Fastaurant
hands-on-001
Individual
İstatistik notlar
LinkedIn sunum
MatS Çalışma Alanı
ML Sunumlar
Nota taramalar final.07.10.2020
PROJE YÖNETİMİ PROGRAMI...
pyTranscriber
SDLC-Agile-JIRA ders notları
SUNUMLAR
SWOT Analizler
TechPro Dosyalar
TechPro DS notebooklar
Yüksek Lisans-Analiz dosyaları
15.11. english.docx
Batch 34 Data Science DL 01_...
Launcher
Desktop
Notebook
Python 3
Console
Python 3
Other
Terminal
Text File
Markdown File
Show Contextual Help
0 0
Launcher

Terminal'i açıyoruz.. Python kütüphanesi olduğu için eğer güncel versiyon problemi yok ise anaconda prompt da kullanabilriz..



- (**Base**) de iken : bu aşamada;

  pip install streamlit yazıyoruz.

conda-forge / packages / streamlit 1.15.2

The fastest way to build data apps in Python

copied from cf-staging / streamlit

Conda | Files | Labels | Badges

License: Apache-2.0
Home: https://streamlit.io
134921 total downloads
Last upload: 2 days and 21 hours ago

Installers

noarch v1.15.2

conda install

To install this package run one of the following:

```
conda install -c conda-forge streamlit
```

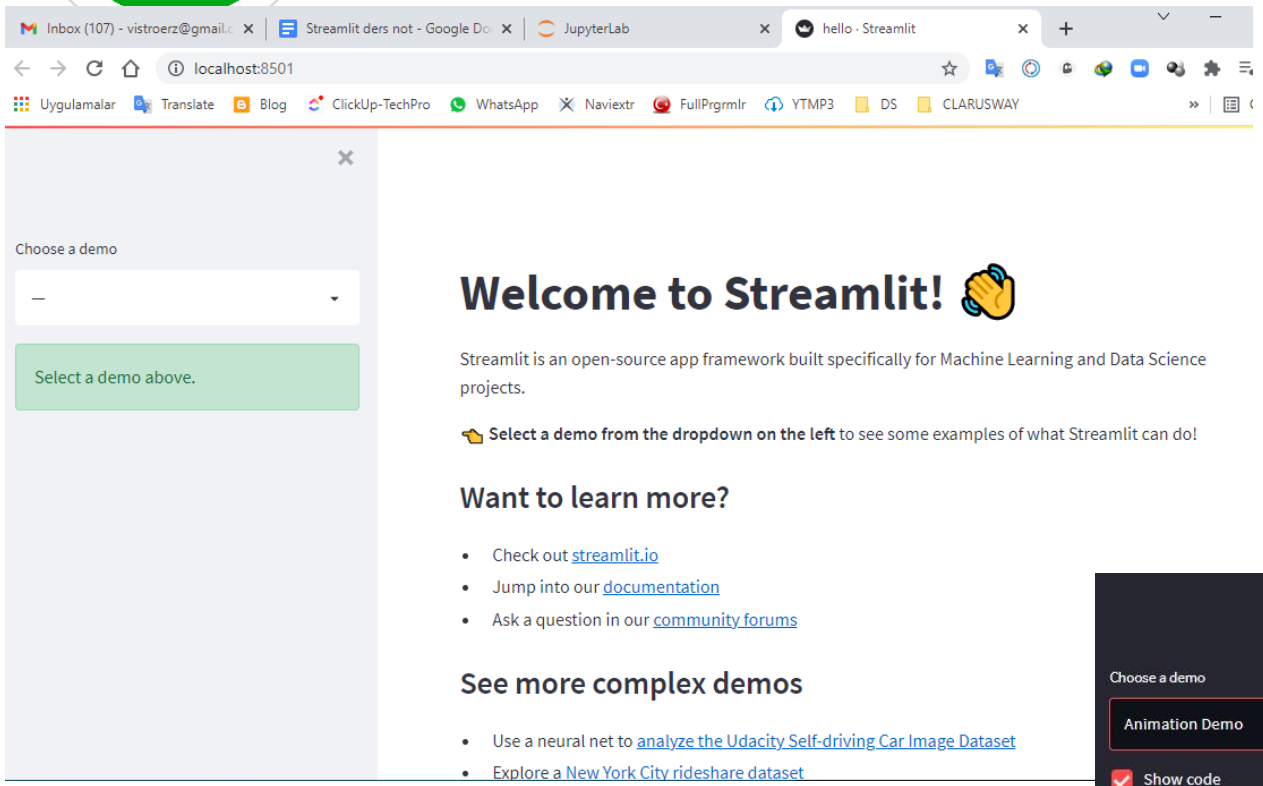
```
(base) C:\Users\vistr>streamlit version
2021-11-19 02:57:46.002 INFO    numexpr.utils:
Streamlit, version 1.2.0
```

- Prompter da **streamlit version** yazarak versiyon kontrolü yapıyoruz.

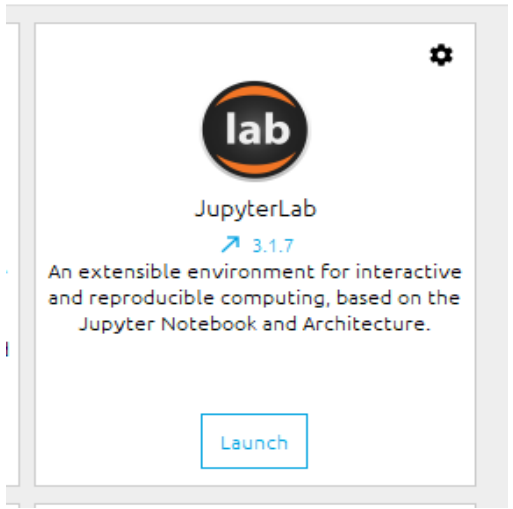
```
(base) C:\Users\vistr>streamlit hello
2021-11-19 03:03:58.656 INFO    numexpr.utils: NumExpr defaulting to 4 threads.

  Welcome to Streamlit. Check out our demo in your browser.

  Local URL: http://localhost:8501
  Network URL: http://192.168.0.28:8501

  Ready to create your own Python apps super quickly?
  Head over to https://docs.streamlit.io

  May you create awesome apps!
```

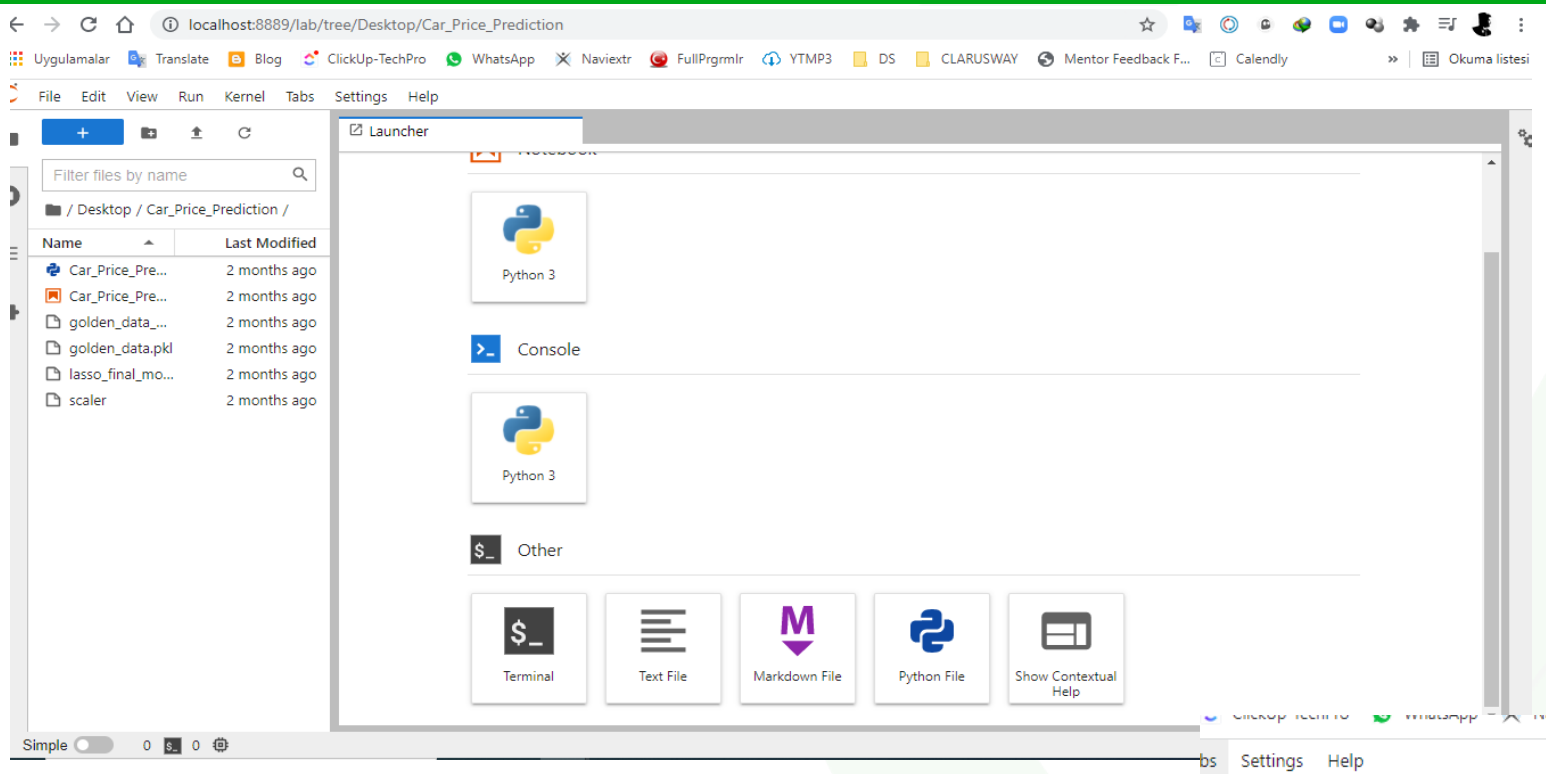
- **Streamlit hello** yazalım yandaki resimdeki gibi.

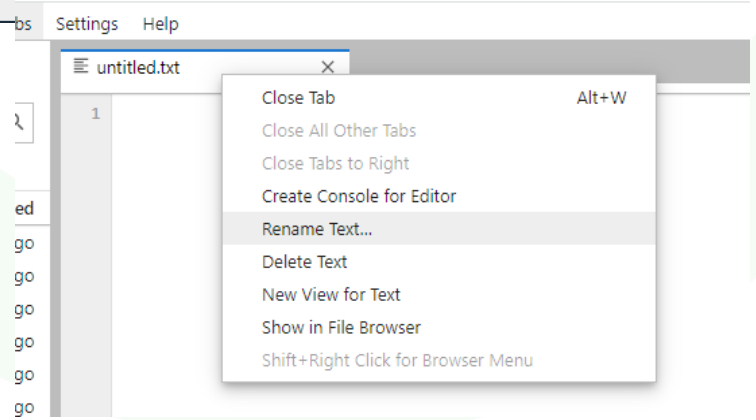
Hello Streamlit sayfası



File Loading







import streamlit as st

#text/file
st.title("Streamlit Tutorial")
st.text("Hello Streamlit")

streamlit run app.py

```
st.title() # corresponds to H1 heading
st.header() # corresponds to H2 heading
st.subheader() # corresponds to H3 heading
```

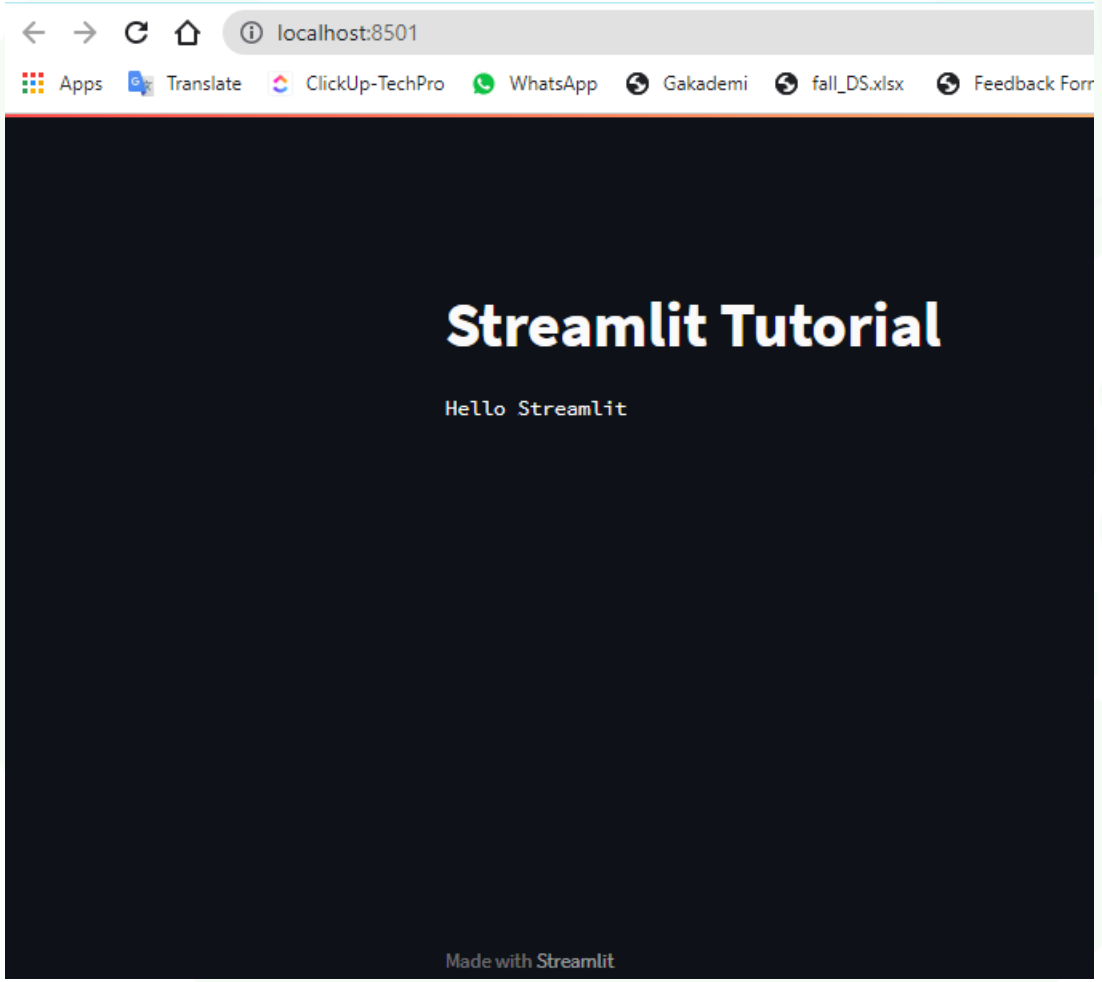
Anaconda Prompt (anaconda3)

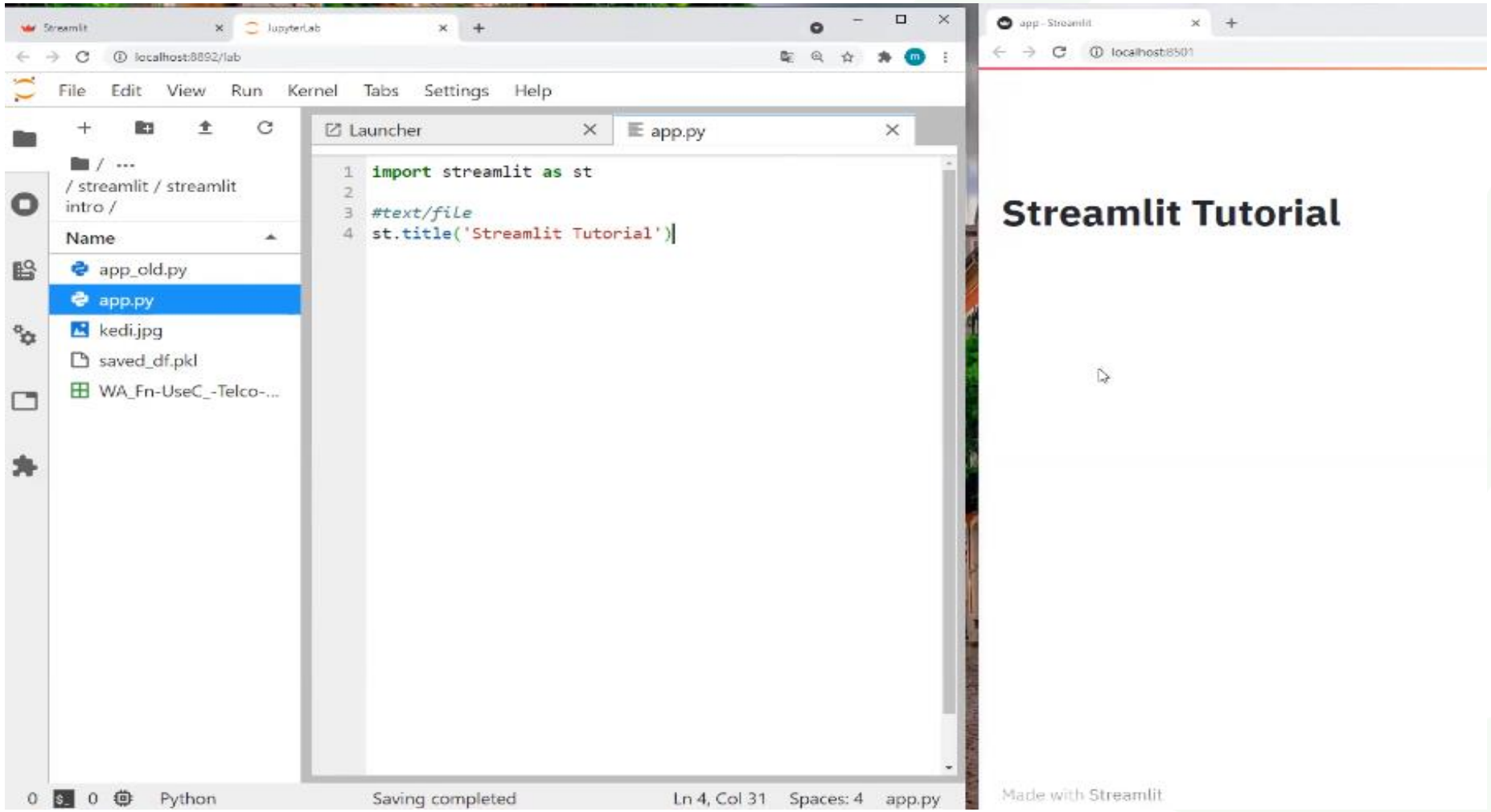
```
(base) C:\Users\pc>cd desktop

(base) C:\Users\pc\Desktop>cd "streamlit ders dokuman"

(base) C:\Users\pc\Desktop\streamlit ders dokuman>cd Car_Price_Prediction

(base) C:\Users\pc\Desktop\streamlit ders dokuman\Car_Price_Prediction>dir
 Volume in drive C has no label.
 Volume Serial Number is B661-3197

 Directory of C:\Users\pc\Desktop\streamlit ders dokuman\Car_Price_Prediction

28.05.2022  02:36    <DIR>          .
28.05.2022  01:54    <DIR>          ..
28.05.2022  02:32    <DIR>          .ipynb_checkpoints
28.05.2022  02:36                93 app.py
27.09.2021  01:12         1.414.309 Car_Price_Prediction.ipynb
27.09.2021  01:12             1.300 Car_Price_Prediction_App.py
27.09.2021  01:12        11.905.196 golden_data.pkl
27.09.2021  01:12        11.905.196 golden_data_not_dummy.pkl
27.09.2021  01:12               620 lasso_final_model
27.09.2021  01:12               807 scaler
               7 File(s)     25.227.521 bytes
               3 Dir(s)  129.291.149.312 bytes free

(base) C:\Users\pc\Desktop\streamlit ders dokuman\Car_Price_Prediction>streamlit run app.py
```

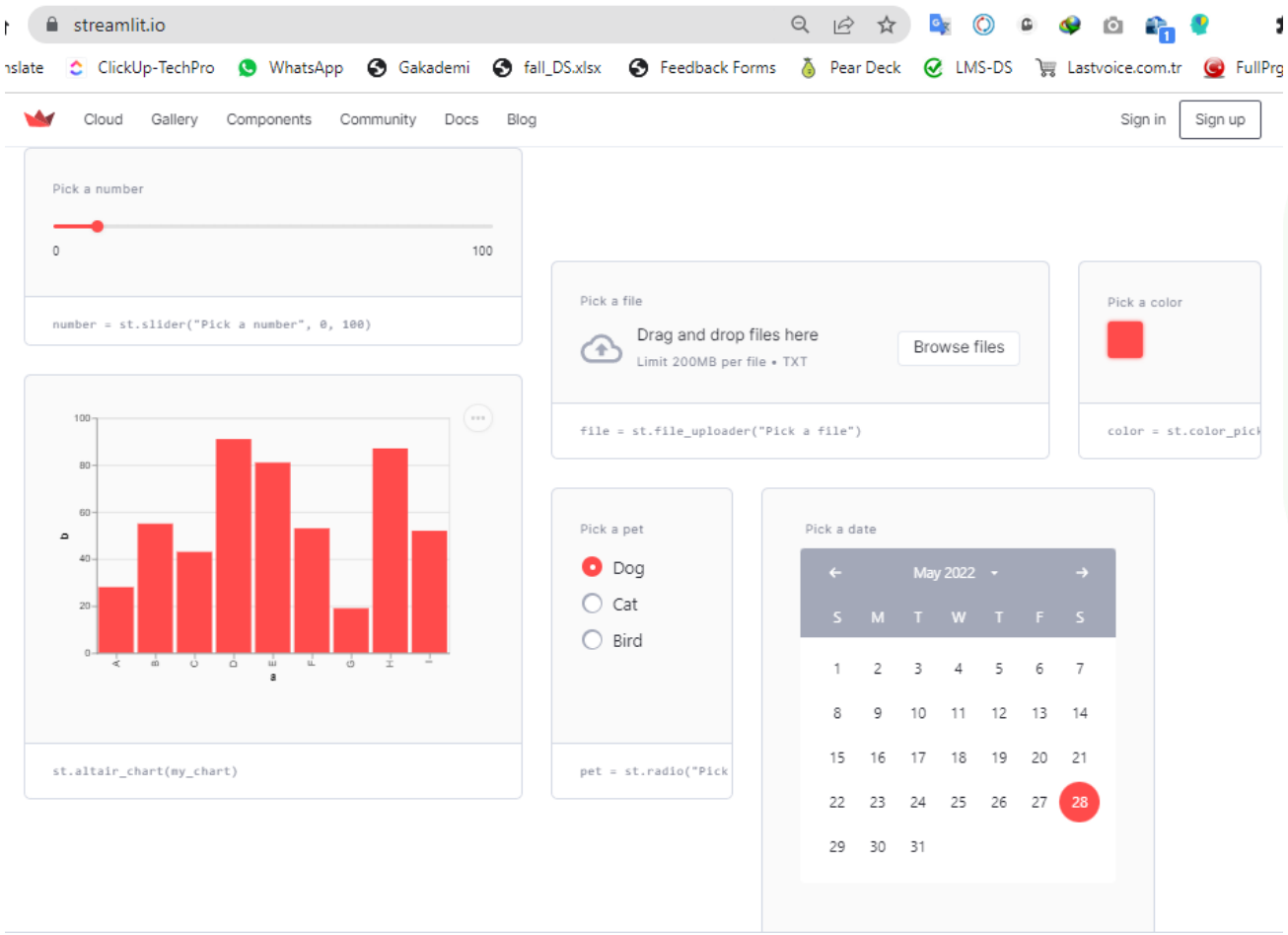
Streamlit Tuturial Page

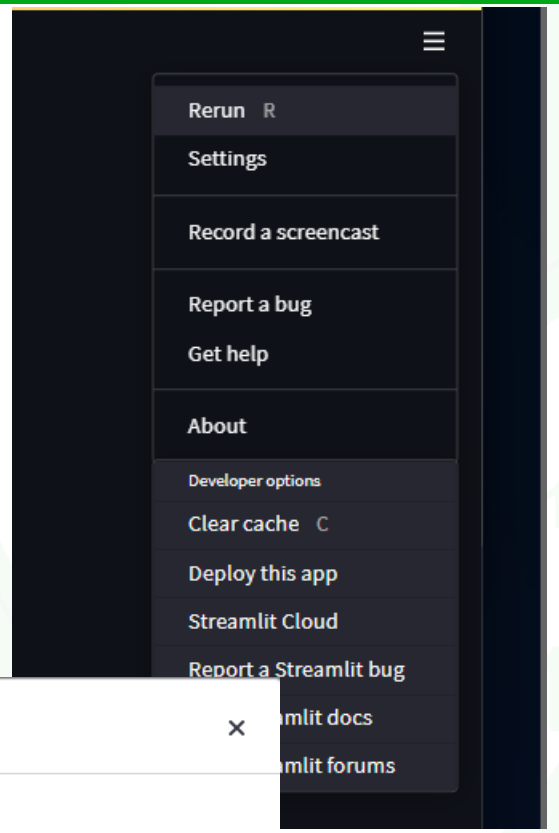
Anaconda Prompt (anaconda3) - streamlit run app.py

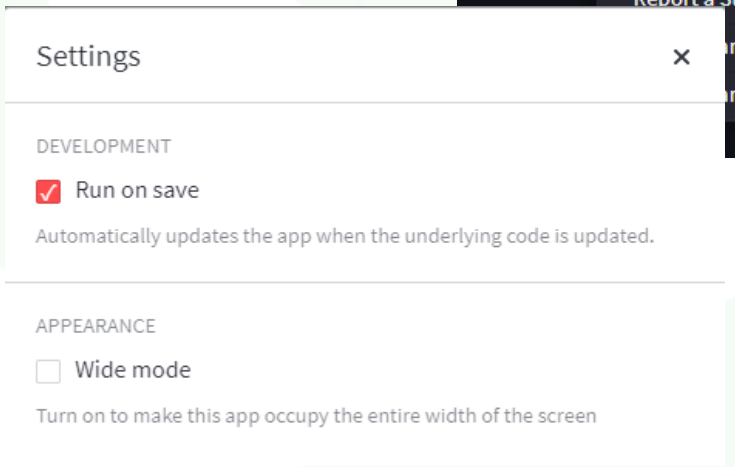
```
(base) C:\Users\pc\Desktop\streamlit ders dokuman\Car_Price_Prediction>dir
 Volume in drive C has no label.
 Volume Serial Number is B661-3197

 Directory of C:\Users\pc\Desktop\streamlit ders dokuman\Car_Price_Prediction

28.05.2022  02:36    <DIR>          .
28.05.2022  01:54    <DIR>          ..
28.05.2022  02:32    <DIR>          .ipynb_checkpoints
28.05.2022  02:36                93 app.py
27.09.2021  01:12         1.414.309 Car_Price_Prediction.ipynb
27.09.2021  01:12             1.300 Car_Price_Prediction_App.py
27.09.2021  01:12        11.905.196 golden_data.pkl
27.09.2021  01:12        11.905.196 golden_data_not_dummy.pkl
27.09.2021  01:12               620 lasso_final_model
27.09.2021  01:12               807 scaler
               7 File(s)     25.227.521 bytes
               3 Dir(s)  129.291.149.312 bytes free

(base) C:\Users\pc\Desktop\streamlit ders dokuman\Car_Price_Prediction>streamlit run app.py
2022-05-28 02:44:04.102 INFO    numexpr.utils: Note: NumExpr detected 12 cores but "NUMEXPR_MAX_THREADS"
rcing safe limit of 8.
2022-05-28 02:44:04.102 INFO    numexpr.utils: NumExpr defaulting to 8 threads.

  You can now view your Streamlit app in your browser.

  Local URL: http://localhost:8501
  Network URL: http://192.168.0.36:8501
```




Streamlit
JupyterLab
localhost:8892/lab
File Edit View Run Kernel Tabs Settings Help
/ streamlit / streamlit intro /
Name
app_old.py
app.py
kedi.jpg
saved_df.pkl
WA_Fn-UseC_-Telco-...
Launcher
app.py
1 import streamlit as st
2
3 #text/file
4 st.title('Streamlit Tutorial')
0 0 Python
Saving completed
Ln 4, Col 31 Spaces: 4 app.py
app - Streamlit
localhost:8501
Streamlit Tutorial
Made with Streamlit


streamlit.io
ClickUp-TechPro
WhatsApp
Gakademi
fall_DS.xlsx
Feedback Forms
Pear Deck
LMS-DS
Lastvoice.com.tr
Cloud
Gallery
Components
Community
Docs
Blog
Sign in
Sign up
Pick a number
0
100
number = st.slider("Pick a number", 0, 100)
Pick a file
Drag and drop files here
Limit 200MB per file • TXT
Browse files
file = st.file_uploader("Pick a file")
Pick a color
color = st.color_pick
st.altair_chart(my_chart)
Pick a pet
Dog
Cat
Bird
pet = st.radio("Pick
Pick a date
May 2022
S M T W T F S
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31

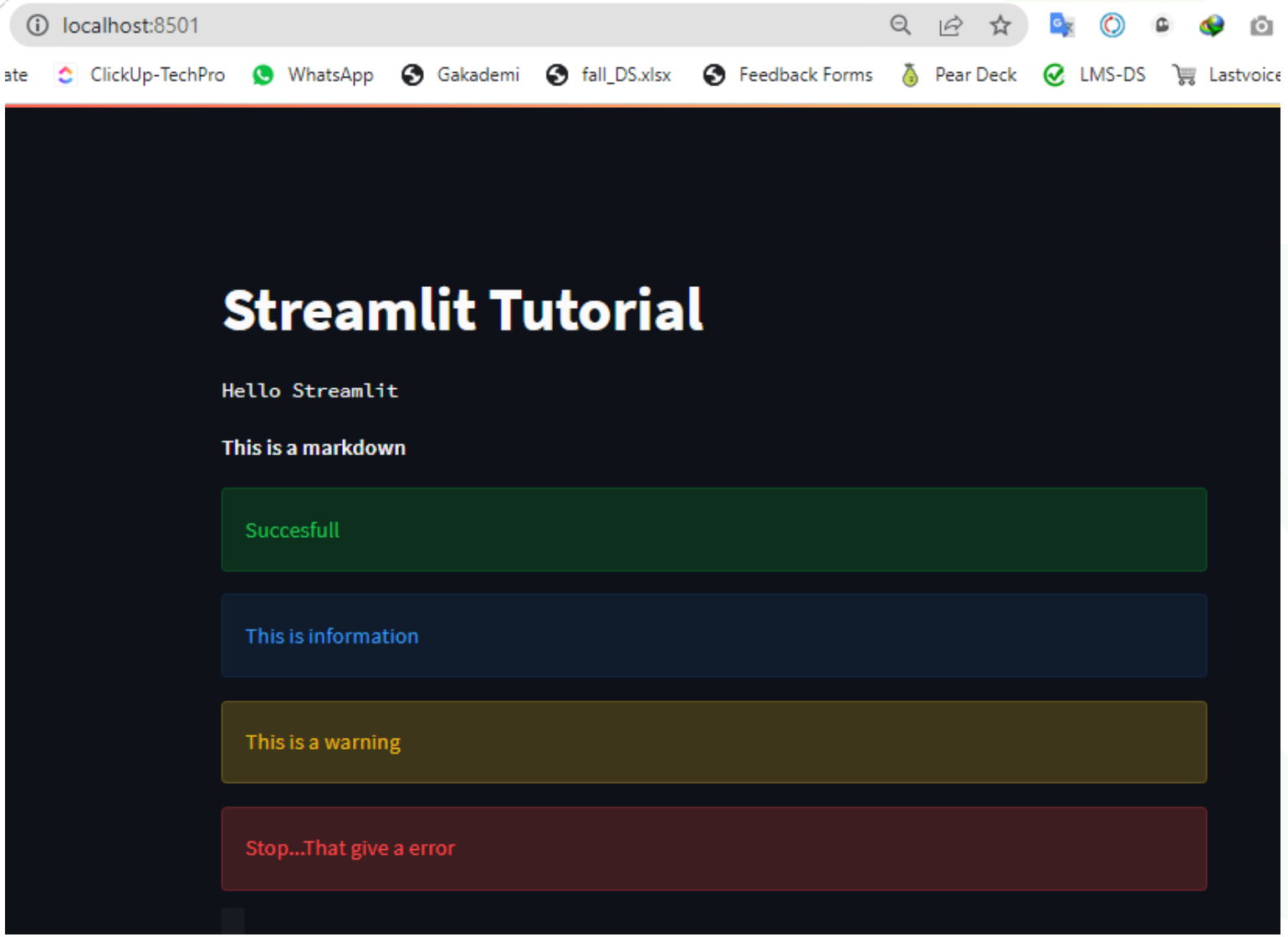

Rerun R
Settings
Record a screencast
Report a bug
Get help
About
Developer options
Clear cache C
Deploy this app
Streamlit Cloud
Report a Streamlit bug
mlit docs
mlit forums


Settings
DEVELOPMENT
Run on save
Automatically updates the app when the underlying code is updated.
APPEARANCE
Wide mode
Turn on to make this app occupy the entire width of the screen

```
#header/subheader    (alt başlık)
st.header('This is a header')
st.subheader('This is a subheader')
```

```
#markdown
st.markdown("**This is a markdown**")
```

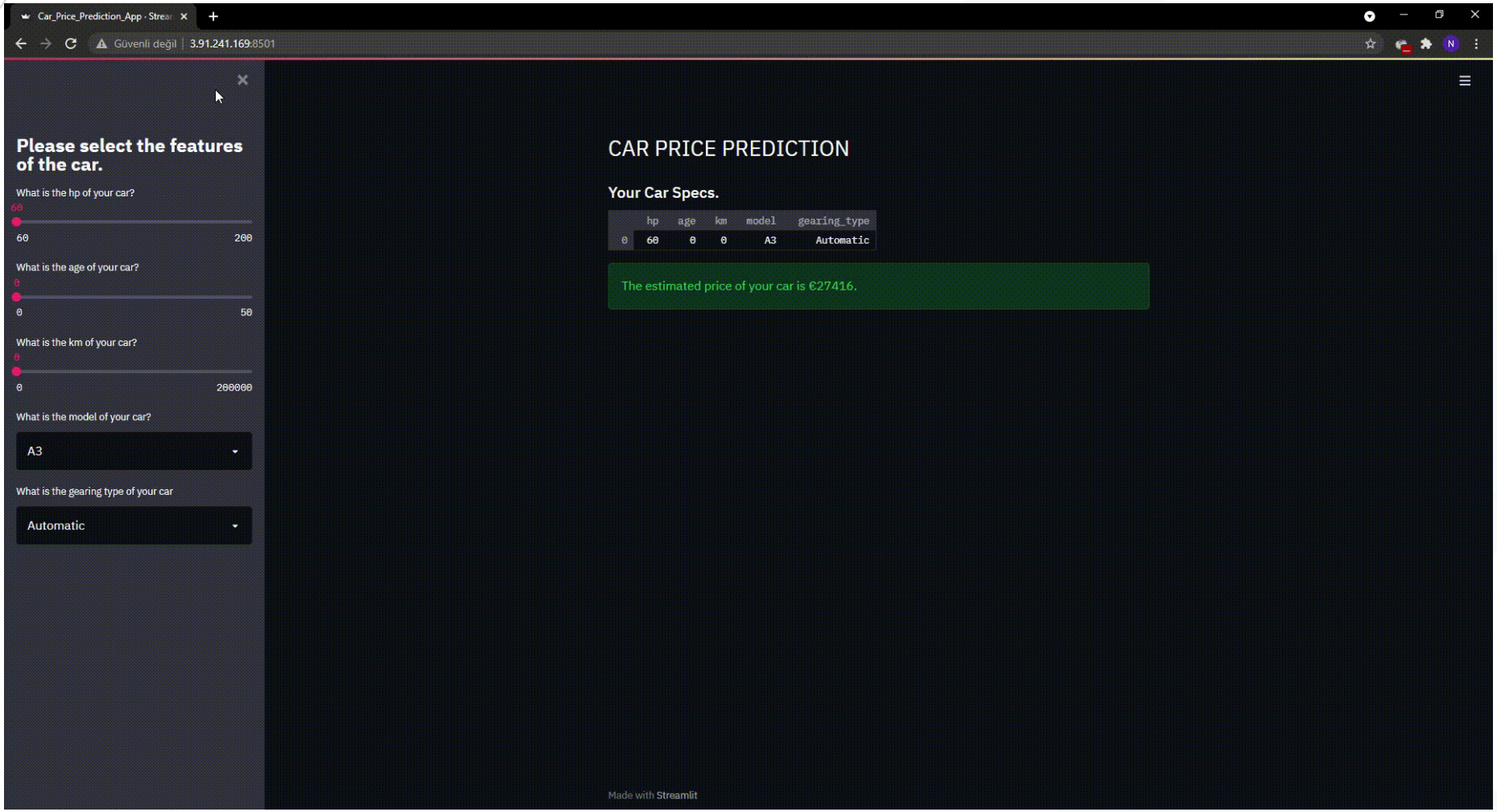
```
#colorfull
st.success('Succesfull')
st.info("This is information")

#help
st.warning('This is a warning')
st.error('Stop...That give a error')

#get help
st.help(range)

#writing text
st.write("Writing example text with
write function")
```


localhost:8501
ClickUp-TechPro
WhatsApp
Gakademi
fall_DS.xlsx
Feedback Forms
Pear Deck
LMS-DS
Lastvoice
Streamlit Tutorial
Hello Streamlit
This is a markdown
Succesfull
This is information
This is a warning
Stop...That give a error

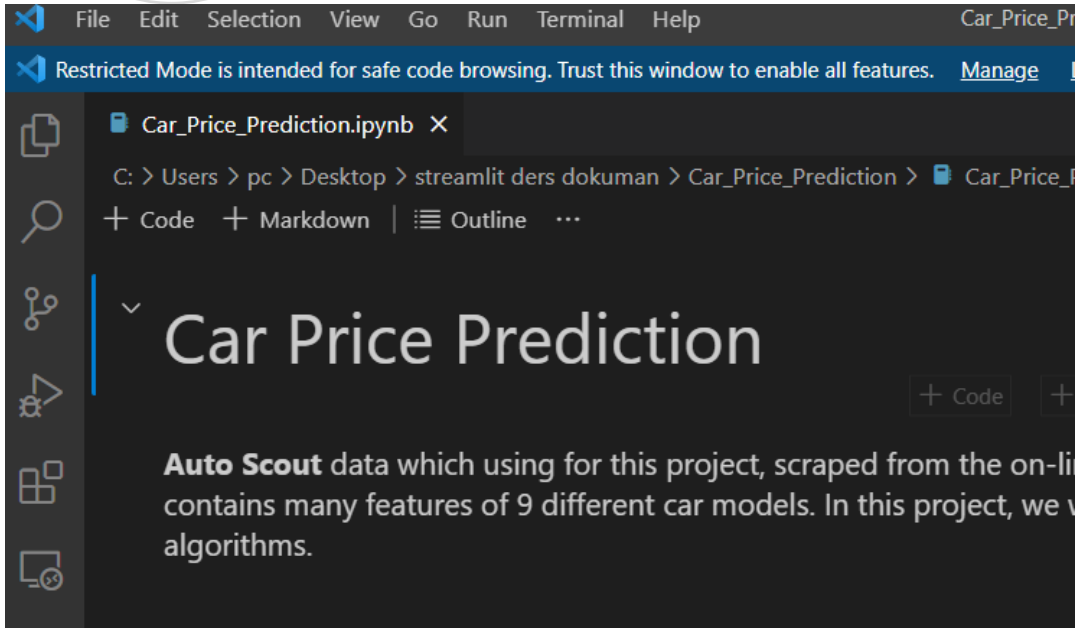
Importing Image and Video

```
#importing images
from PIL import Image
img=Image.open("f1.png")
st.image(img, width=200,
caption="Institutional _photo")    #(st.image
ile streamlit in image fonksiyonu
kullanılıyor)
```

```
#importing video
my_video=open("intro-1.mp4", "rb")
st.video(my_video)
#st.video('https://www.youtube.com/watch
?v=xhGwjUKbiC4')
```



Makalenin olduğu link..



8. Saving the Model and Prediction on New Data

```
lasso_final_model = Lasso(alpha=0.01)
```

```
lasso_final_model.fit(X, y)
```

```
Lasso(alpha=0.01)
```

```
import pickle
pickle.dump(lasso_final_model, open("lasso_final_model", 'wb'))
```

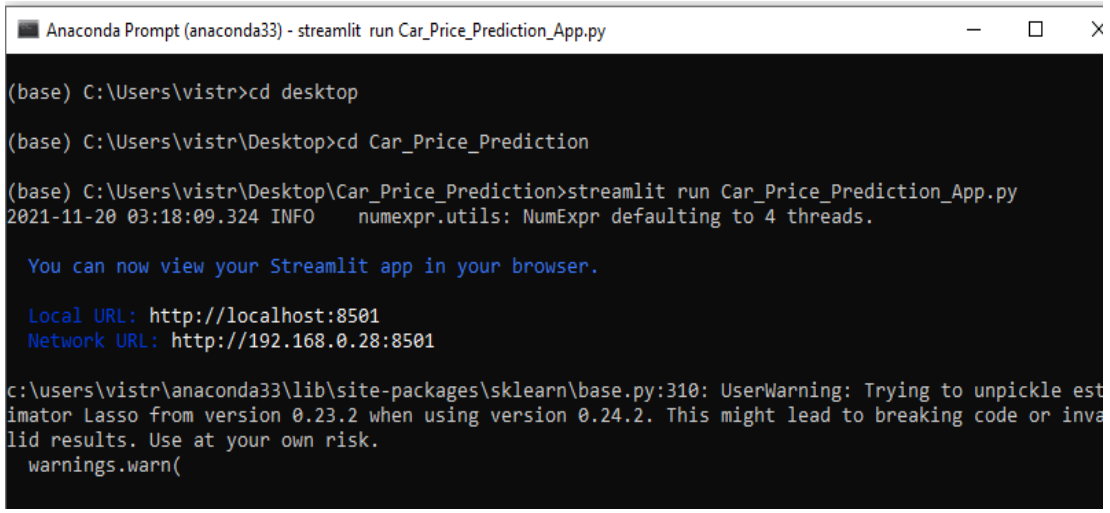
```
final_model = pickle.load(open("lasso_final_model", "rb"))
```

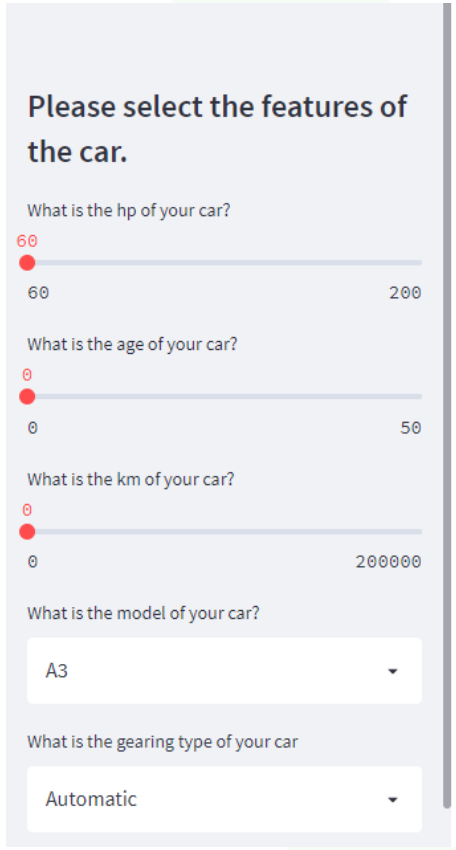
```
import pickle
pickle.dump(lasso_final_model, open("lasso_final_model", 'wb'))
```

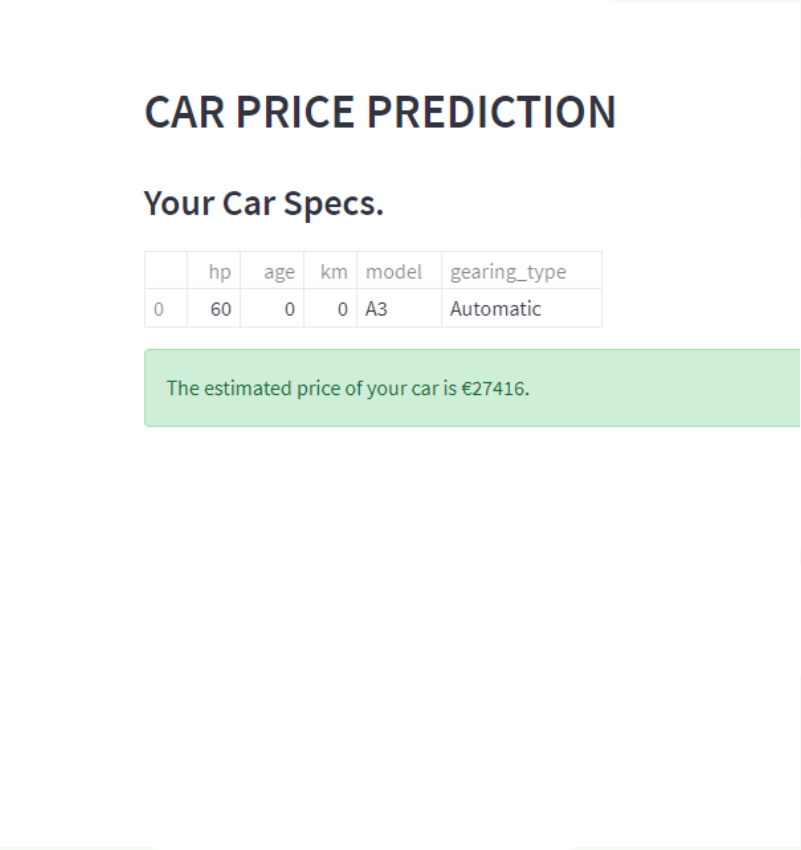
```
final_model = pickle.load(open("lasso_final_model", "rb"))
```

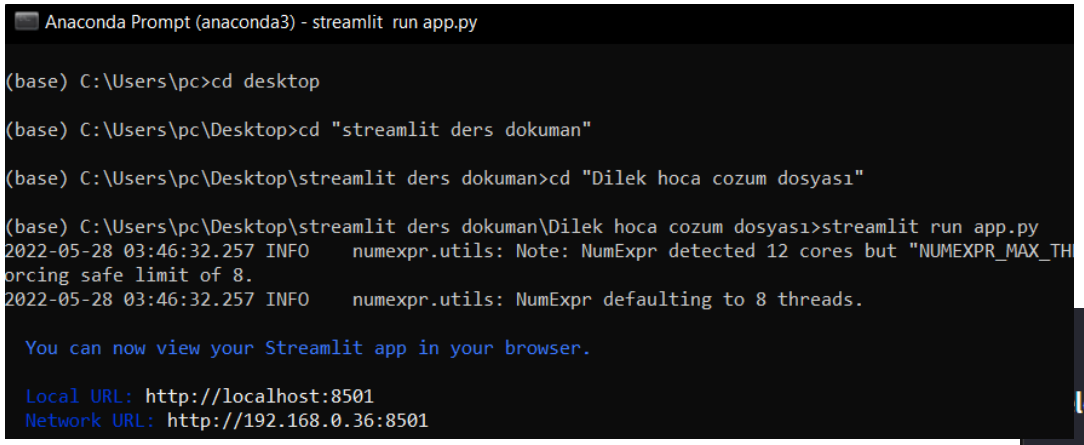
elco_app1.py | Car_Price_Prediction.ipynb | Car_Price_Prediction_App.py

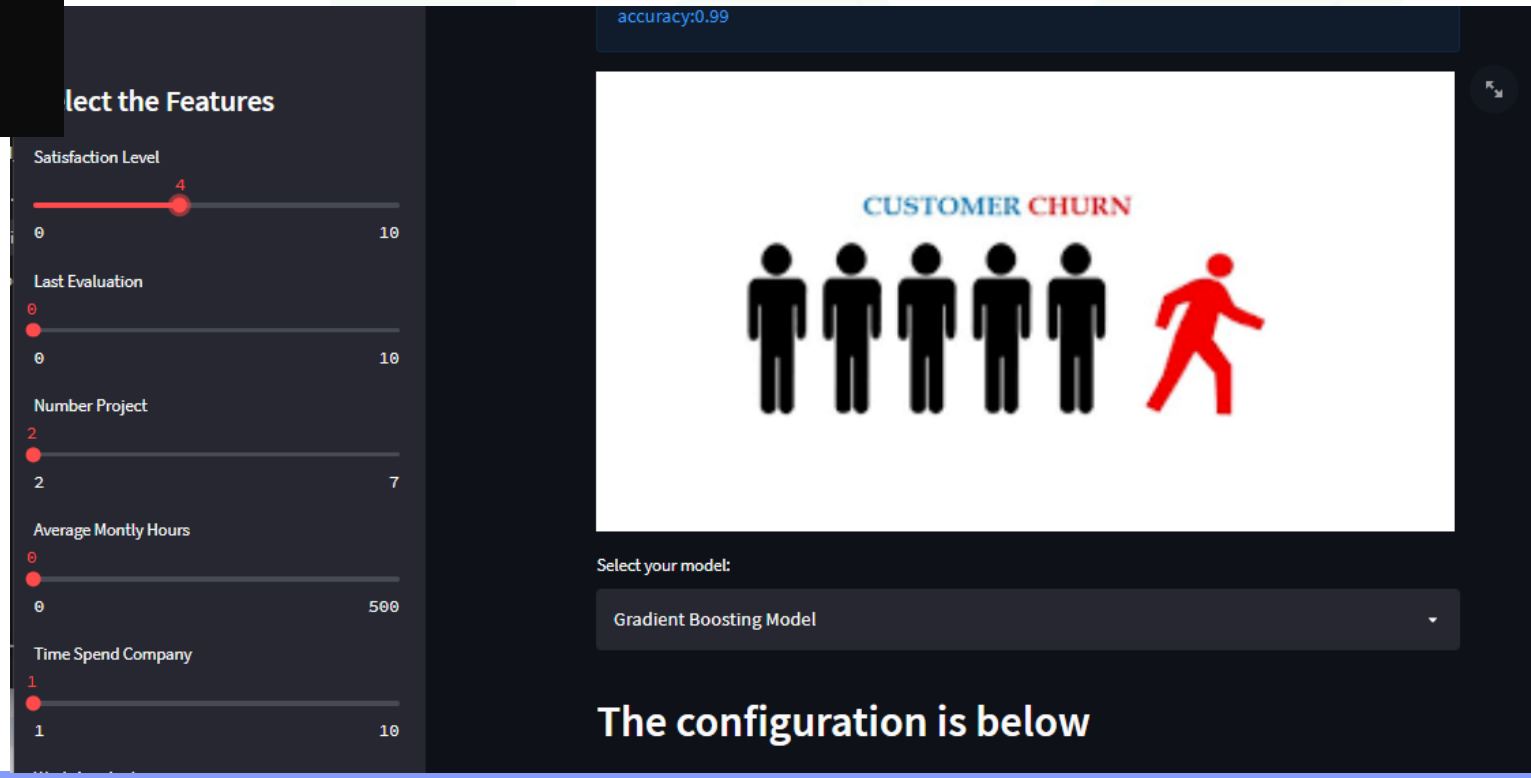
```
st.header('CAR PRICE PREDICTION')

st.sidebar.title("Please select the features of the car.")

hp = st.sidebar.slider("What is the hp of your car?", 60, 200, step=5)
age = st.sidebar.slider("What is the age of your car?", 0, 50, step=1)
km = st.sidebar.slider("What is the km of your car?", 0, 200000, step=1000)
model = st.sidebar.selectbox("What is the model of your car?", ['A3', 'Clio', 'Astra', '
'Escape', 'Insignia'])
gear=st.sidebar.selectbox("What is the gearing type of your car", ['Automatic', 'Manual'


my_dict = {
    "hp": hp,
    "age": age,
    "km": km,
    "model": model,
    "gearing_type": gear
}

df = pd.DataFrame.from_dict([my_dict])
```


Anaconda Prompt (anaconda33) - streamlit run Car_Price_Prediction_App.py
(base) C:\Users\vistr>cd desktop
(base) C:\Users\vistr\Desktop>cd Car_Price_Prediction
(base) C:\Users\vistr\Desktop\Car_Price_Prediction>streamlit run Car_Price_Prediction_App.py
2021-11-20 03:18:09.324 INFO numexpr.utils: NumExpr defaulting to 4 threads.
You can now view your Streamlit app in your browser.
Local URL: http://localhost:8501
Network URL: http://192.168.0.28:8501
c:\users\vistr\anaconda33\lib\site-packages\sklearn\base.py:310: UserWarning: Trying to unpickle estimator Lasso from version 0.23.2 when using version 0.24.2. This might lead to breaking code or invalid results. Use at your own risk.
warnings.warn(


Please select the features of the car.
What is the hp of your car?
60
60
200
What is the age of your car?
0
0
50
What is the km of your car?
0
0
200000
What is the model of your car?
A3
What is the gearing type of your car
Automatic

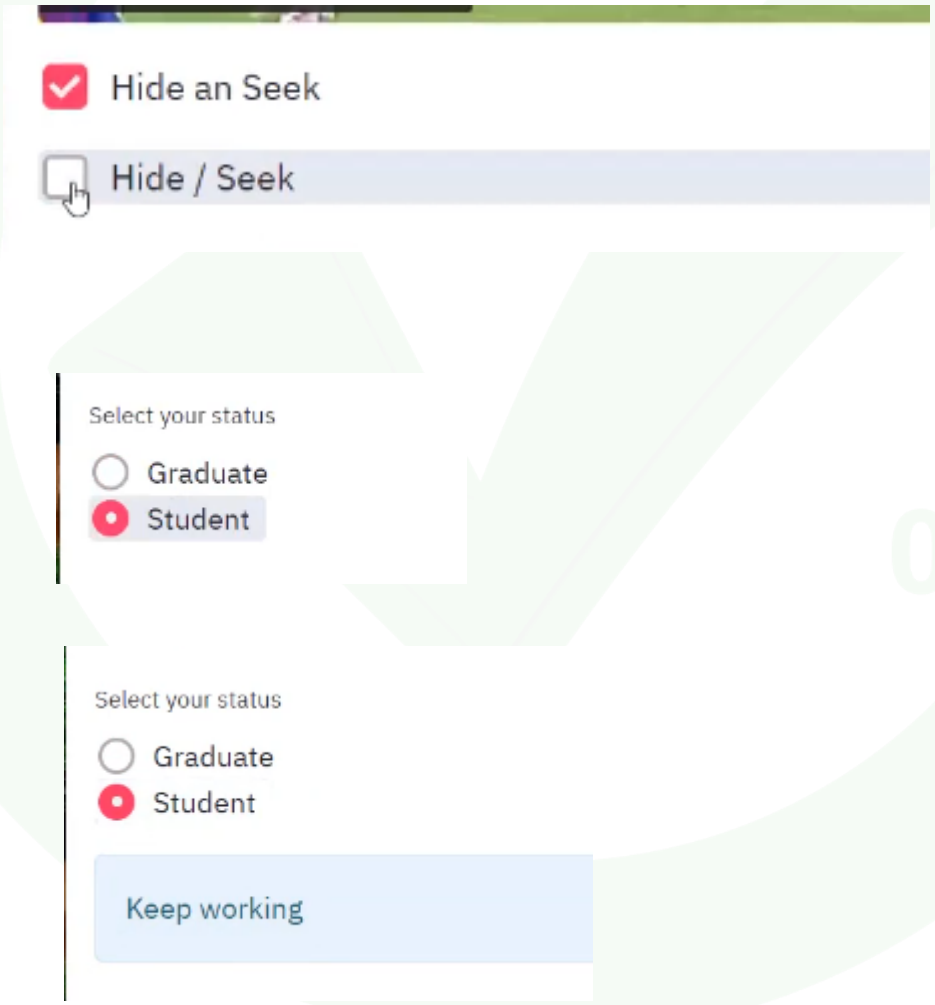

CAR PRICE PREDICTION
Your Car Specs.
hp age km model gearing_type
0 60 0 0 A3 Automatic
The estimated price of your car is €27416.


Anaconda Prompt (anaconda3) - streamlit run app.py
(base) C:\Users\pc>cd desktop
(base) C:\Users\pc\Desktop>cd "streamlit ders dokuman"
(base) C:\Users\pc\Desktop\streamlit ders dokuman>cd "Dilek hoca cozum dosyası"
(base) C:\Users\pc\Desktop\streamlit ders dokuman\Dilek hoca cozum dosyası>streamlit run app.py
2022-05-28 03:46:32.257 INFO numexpr.utils: Note: NumExpr detected 12 cores but "NUMEXPR_MAX_TH
orcing safe limit of 8.
2022-05-28 03:46:32.257 INFO numexpr.utils: NumExpr defaulting to 8 threads.
You can now view your Streamlit app in your browser.
Local URL: http://localhost:8501
Network URL: http://192.168.0.36:8501


accuracy:0.99
lect the Features
Satisfaction Level
4
0
10
Last Evaluation
0
0
10
Number Project
2
2
7
Average Montly Hours
0
0
500
Time Spend Company
1
1
10
CUSTOMER CHURN
Select your model:
Gradient Boosting Model
The configuration is below

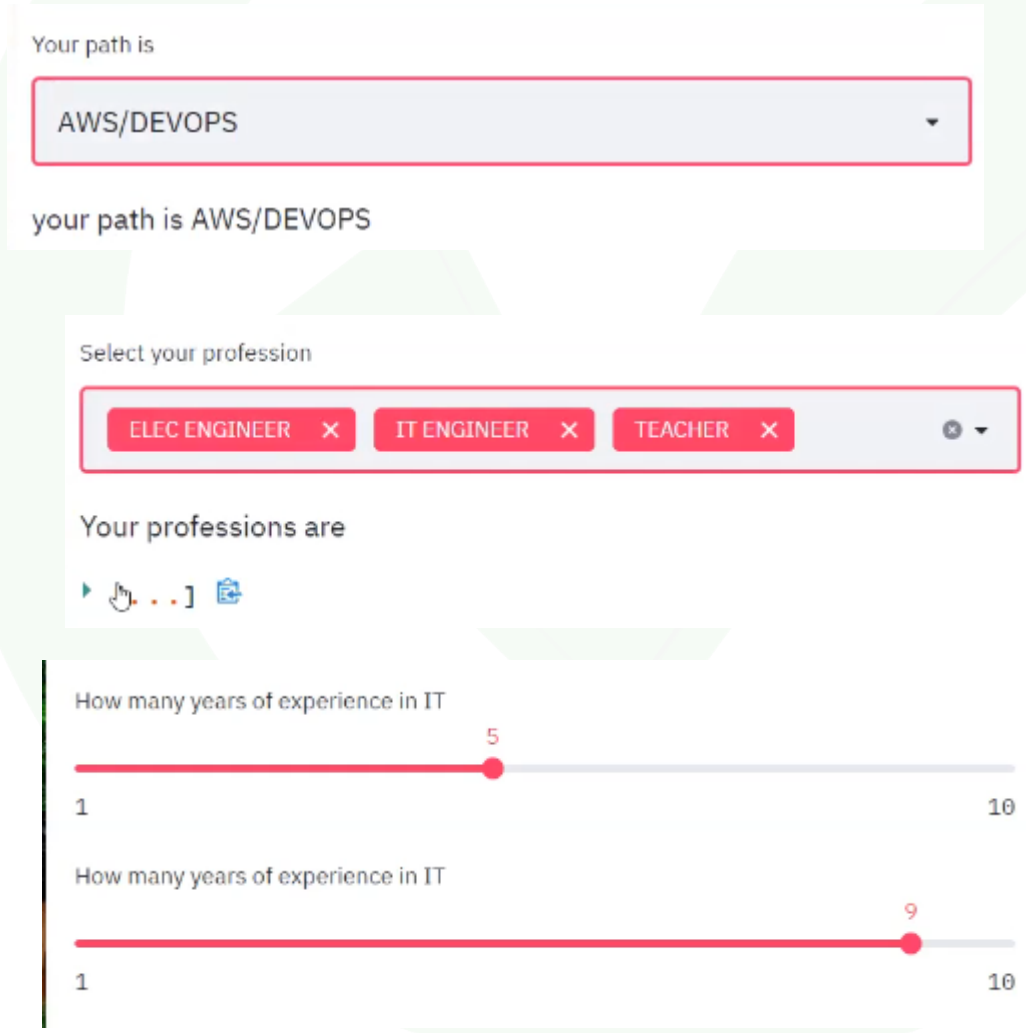
```
#checkbox
st.checkbox("Hide and Seek")

if st.checkbox("Hide/Seek"):
        st.text("You checked i show")
```

```
#radio button
status=st.radio("Select your
status", ("Graduate", "Student"))
 if status == "Graduate" :
    st.success("Congrats")
else:
    st.info("Keep working")
```



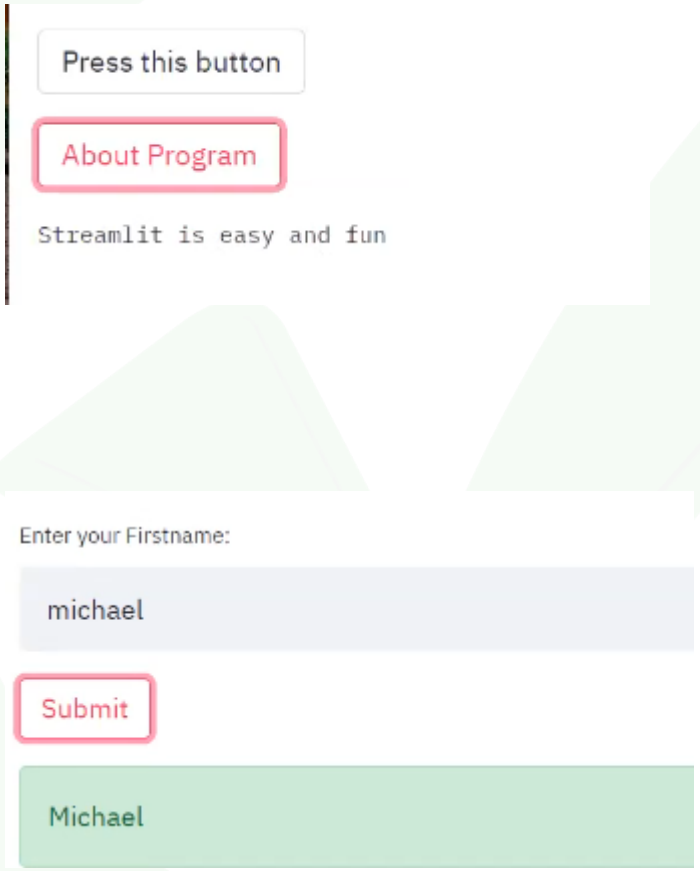
Box ve Slider ekleme

```
#select box
path=st.selectbox("Your path is ", ["DS", "FS",
"AWS/DevOps"])
st.write("Your path is", path)

#multiselect
profession = st.multiselect("Select your profession",
["Engineer", "Teacher", "Nurse", "IT"])
st.write("Your profession is", profession)

#slider
count=st.slider("How many years of experience in IT"
,1,10,5)
count=st.slider("How many years of experience in IT"
,1,10,2,(2))
```



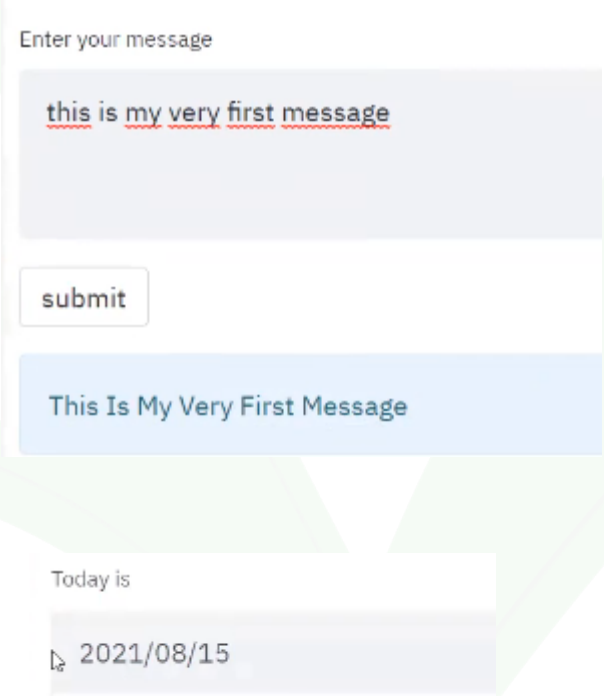
Button ekleme

```
#button
st.button("Press this button")

if st.button("About Program"):
    st.text("Streamlit is easy and fun")
else:
    st.text("Nothing to say")

# text input  ()
firstname= st.text_input("Enter your name:")

if st.button("Submit"):
    st.success(firstname.title())
```



- **# text area ()**
- **message= st.text_area("Enter your message:", "type right here..")**
- **if st.button("submit"):**
- **   st.info(message.title())**

- **#date input**
- **import datetime   (önce fonksiyonu çağırdık)**
- **today=st.date_input("Today is" , datetime.datetime.now())**
- st.text_input('First name')
- st.number_input('Pick a number', 0, 10)

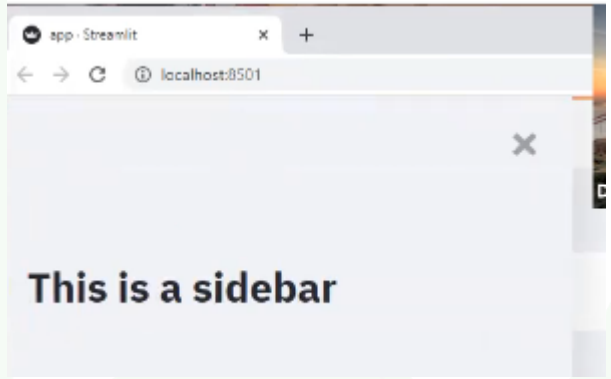


- #time input
  my_time=st.time_input("Time is" ,
  datetime.time(22,15))

- # raw data
- st.text("display text")
- st.code("import pandas as pd")

- # multiple line
- with st.echo():
- import pandas as pd
- import numpy as np
- import seaborn as sns

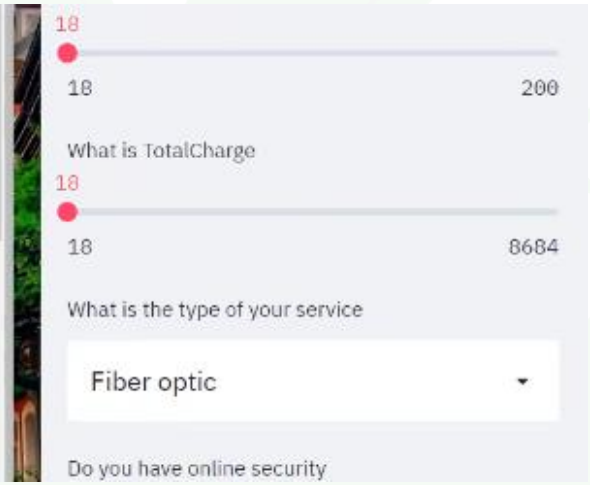
- **# sidebar**
- **st.sidebar.title("This is a sidebar")**



- **# read a dataframe**
- **import pandas as pd**
- **data = pd.read_csv('Advertising.csv')**
- st.write(data)

st.dataframe(data)

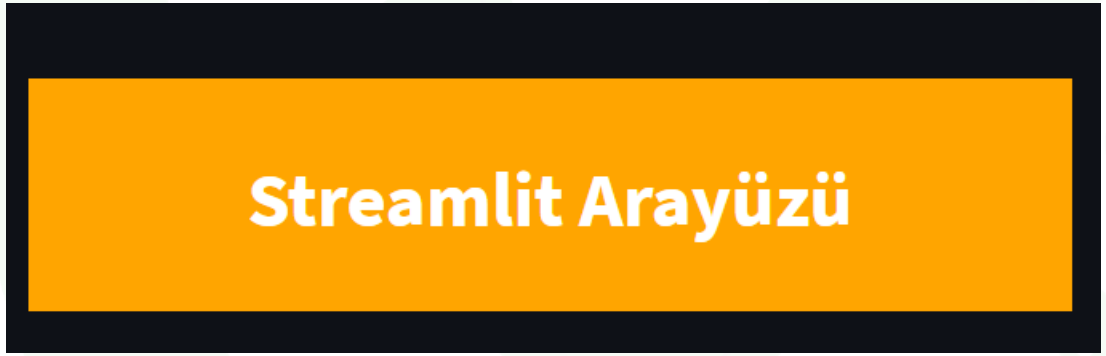
```
tenure=st.sidebar.slider("How long in
months:",1,99,step=1)
MonthlyCharges=st.sidebar.slider("What is
MonthlyCharge", 18, 200, step=5)
TotalCharges=st.sidebar.slider("What is TotalCharge",
18, 8684, step=18)
InternetService=st.sidebar.selectbox("What is the
type of your service", ('Fiber optic','DSL','No'))
OnlineSecurity=st.sidebar.radio ("Do you have online
security", ('Yes','No'))
TechSupport=st.sidebar.radio ("Do you have
techsupport", ('Yes','No'))
Contract=st.sidebar.selectbox("What is the type of
contract", ('Month-to-month','Two year','One year'))
```



- **st.balloons()**
- **st.snow()**

Background colur u HTML kodlarıya düzenleme:

```
st.markdown(
    """

    <div style='background-color: orange; padding: 10px;'>
    <h1 style='color: white; text-align: center;'>Streamlit Arayüzü</h1>
    </div>
    """,
    unsafe_allow_html=True
)
```



- st.latex(r'E = mc^2') #LaTeX formatında matematiksel ifadeler ekler.
- # Dosya Yükleme

```
import pandas as pd
# Dosya yükleme widget'ını ekleyin
uploaded_file = st.file_uploader("Advertising.csv", type=["csv"])
# Eğer bir dosya yüklendiyse, bu dosyayı pandas ile okuyun
if uploaded_file is not None:    #data = pd.read_csv(uploaded_file)
#st.write(data)
# DataFrame'i ekrana yazdır        # ----------------------
```

- Plotly ile bir scatter plot oluşturalım. Örneğin, TV reklam bütçesi ile satışları karşılaştıralım.

```
import plotly.express as
pxfig = px.scatter(data,
x='TV', y='sales', title='TV
Reklamları vs. Satışlar’)

st.plotly_chart(fig)
```

- #Vega-Lite ile bir bar chart oluşturalım.Örneğin, radyo reklam bütçesinin ortalamasını gösterelim.

```
bar_chart = {    "mark": "bar",
"encoding": {        "x": {"field":
"radio", "bin": True, "type":
"quantitative"},        "y":
{"aggregate": "average",
"field": "sales", "type":
"quantitative"}    }}

st.vega_lite_chart(data,
bar_chart)
```

- #st.pyplot(): Bu fonksiyon, Matplotlib ile oluşturulan grafikleri göstermek için kullanılır. Örneğin, TV reklam bütçesi ile satışları bir scatter plot ile gösterelim:
- import matplotlib.pyplot as plt
- plt.figure(figsize=(10, 6))plt.scatter(data['TV'], data['sales'], color='blue')plt.title('TV Reklamları vs. Satışlar')plt.xlabel('TV Reklam Bütçesi')plt.ylabel('Satışlar')st.pyplot(plt)
- st.markdown(""" <h1 style='color: white; text-align: center;'>Streamlit Arayüzü</h1> """, unsafe_allow_html=True)

- #st.map():Bu fonksiyon, coğrafi veri görselleştirmesi için kullanılır. Advertising.csv bu tür verilere sahip olmadığı için bu fonksiyonun kullanımı bu veri seti için uygun değil. Ancak, genel bir örnek vermek gerekirse:
- # Örnek veri
- map_data = pd.DataFrame({ 'lat': [37.76, 37.77, 37.78], 'lon': [-122.4, -122.5, -122.6]})
- st.map(map_data)

- # st.line_chart():Bu fonksiyon, çizgi grafikleri göstermek için kullanılır. Örneğin, veri setindeki satışları bir çizgi grafiği ile gösterelim:
- st.line_chart(data['sales'])

- #st.altair_chart():Altair ile bir bar chart oluşturalım. Örneğin, radyo reklam bütçesi ile satışları karşılaştıralım:
- import altair as altchart = alt.Chart(data).mark_bar().encode(x='radio', y='sales', color='sales').properties(title='Radyo Reklamları vs. Satışlar')
- st.altair_chart(chart, use_container_width=True)

- #st.code()import pandas as pd# Veri çerçevesini görüntüler
- df = pd.DataFrame({"a": [1, 2, 3], "b": [4, 5, 6]})

st.code(df.to_markdown(), #lang="markdown", #linenumbers=True,)

#st.checkbox()
if st.checkbox('Onayla'):
st.write('Onaylandı!')

AWS ye geçiş

- Bundan sonraki kısmı alttaki verilen makale linki üzerinden devam edeceğiz..

- **Makale linki..**

- **EC2 ile Terminalde bağlantı yaptıktan sonra yüklenmesi gerekenler:**
- sudo yum update
- sudo python3 -m pip install streamlit
- sudo yum install git –y
- sudo python3 -m pip install joblib
- sudo python3 -m pip install scikit-learn
- Sudo yum install tmux

Create Account

Getting Started with AWS

AWS Account Setup

Step 1 – Create AWS Account

Prerequisites for AWS account

- Email Address
- Mobile Number
- Billing Address (no proofs required)
- Valid Debit card or Credit Card (with balance/limit > USD 1)

Steps to create AWS account

- Go to aws.amazon.com
- Sign Up -> Create New AWS account
- Provide all the details like Email Address, password and unique account name
- Account Type – Personal (If you are creating for self learning)
- Provide Phone, Billing Address details
- Provide Debit/Credit card details
- AWS initiates payment of INR 2 or USD 1 (depending on whether your account is with India (AISPL) or AWS Inc.
- After successful authorization, this charge is reverted to your card

AWS Instance oluşturma

Launch an instance Info

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags Info

Name

test-server

Add additional tags

Instance type Info

Instance type

t2.micro — Free tier eligible

Family: t2 1 vCPU 1 GiB Memory

On-Demand Linux pricing: 0.0116 USD per Hour

On-Demand Windows pricing: 0.0162 USD per Hour

Compare instance types

Quick Start

Amazon Linux | macOS | Ubuntu | Windows | Red Hat | S

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type — Free tier eligible

ami-0b0dcb5067f052a63 (64-bit (x86)) / ami-01b5ec3ed8678d8b7 (64-bit (Arm))

Virtualization: hvm ENA enabled: true Root device type: ebs

Description

Amazon Linux 2 Kernel 5.10 AMI 2.0.20221103.3 x86_64 HVM gp2

Architecture: 64-bit (x86)

AMI ID: ami-0b0dcb5067f052a63 — Verified provider

Create key pair

Key pairs allow you to connect to your instance securely.

Enter the name of the key pair below. When prompted, store the private key in a secure and accessible location on your computer. **You will need it later to connect to your instance.** Learn more

Key pair name

test-server

The name can include upto 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type

- RSA — RSA encrypted private and public key pair
- ED25519 — ED25519 encrypted private and public key pair (Not supported for Windows instances)

Private key file format

- .pem — For use with OpenSSH
- .ppk — For use with PuTTY

Cancel | Create key pair

AWS Instance oluşturma

Enable

Firewall (security groups) Info

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

- (•) Create security group
- ( ) Select existing security group

We'll create a new security group called '**launch-wizard-2**' with the following rules:

- [x] Allow SSH traffic from — Helps you connect to your instance — Anywhere 0.0.0.0/0
- [ ] Allow HTTPS traffic from the internet — To set up an endpoint, for example when creating a web server
- [ ] Allow HTTP traffic from the internet — To set up an endpoint, for example when creating a web server

⚠ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only. ✕

Inbound security groups rules

▼ Security group rule 1 (TCP, 8501, 0.0.0.0/0) — Remove

Type Info	Protocol Info	Port range Info
Custom TCP	TCP	8501

Source type Info	Source Info	Description - *optional* Info
Anywhere	Add CIDR, prefix list or security	e.g. SSH for admin desktop
	0.0.0.0/0 ✕	

▼ **Configure storage** Info — Advanced

1x 8 GiB gp2 Root volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage ✕

Add new volume

0 x File systems — Edit

Storage (volumes)

1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million IOs, 1 GB of snapshots, and 100 GB of bandwidth to the internet ✕

Cancel — Launch instance

Successfully initiated launch of instance (i-0bf09ebc7d2c4942e)

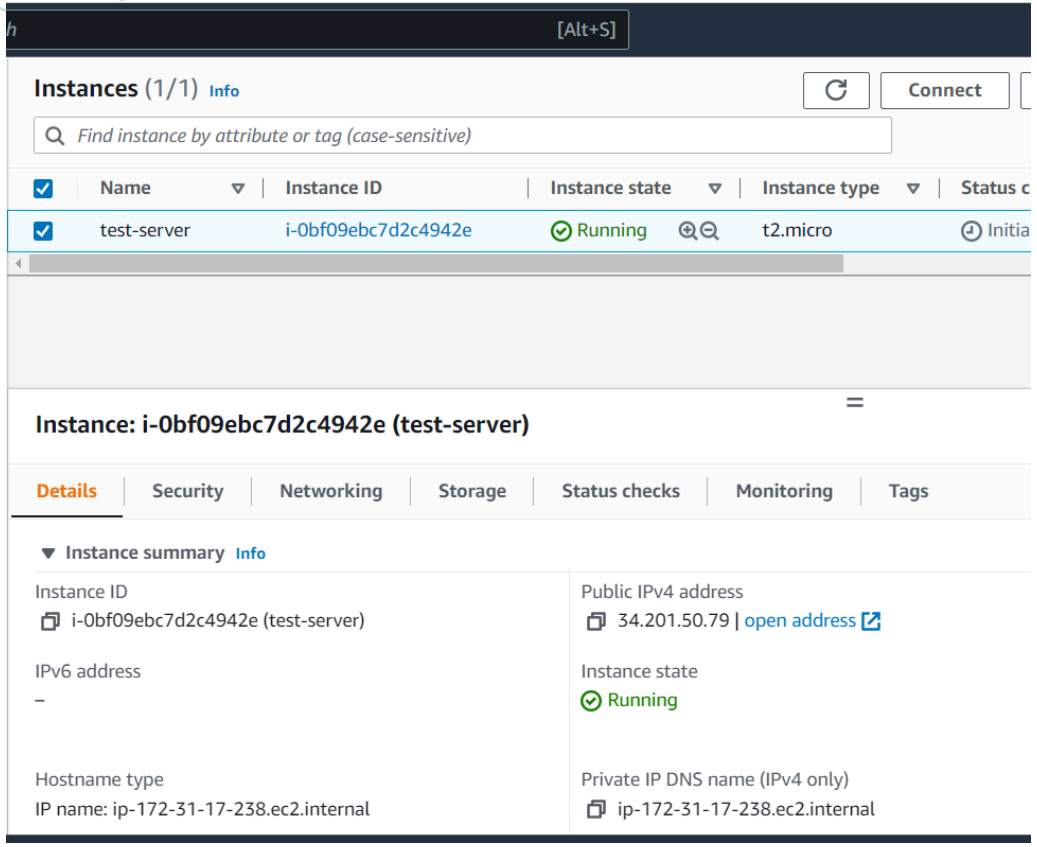
▶ Launch log

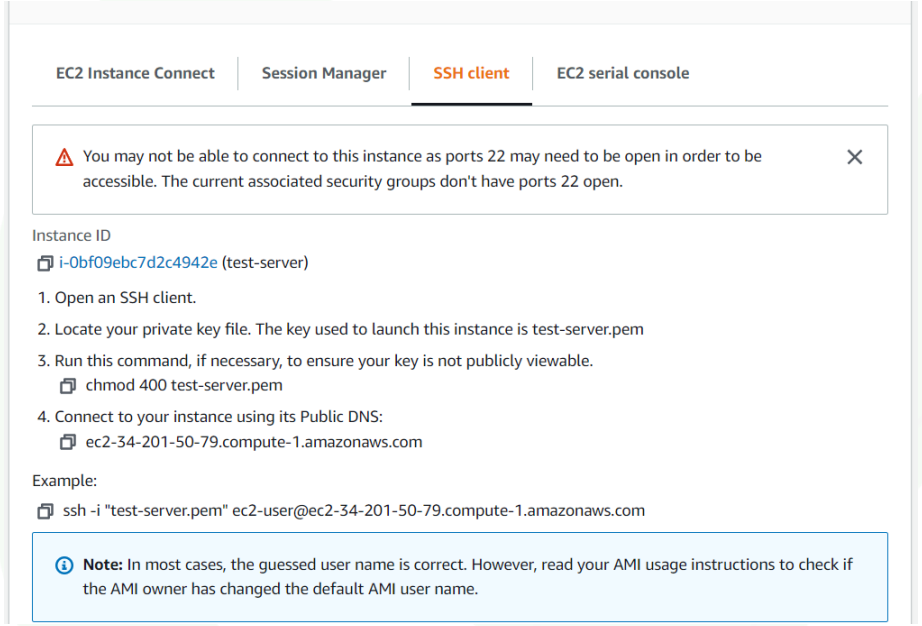
Next Steps

Create billing and free tier usage alerts	Connect to your instance	Connect an RDS database
To manage costs and avoid surprise bills, set up email notifications for billing and free tier usage thresholds.	Once your instance is running, log into it from your local computer.	New — Configure the connection between an EC2 instance and a database to allow traffic flow between them.
Create billing alerts	Connect to instance Learn more	Connect an RDS database Create a new RDS database Learn more

View all instances

AWS Instance oluşturma





Key.pem dosyası düzenlemesi