Computer System Engineering

IMPLEMENTASI SISTEM PEMANTAUAN PERPARKIRAN BERBASIS MACHINE LEARNING

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Dosen Pembimbing 1

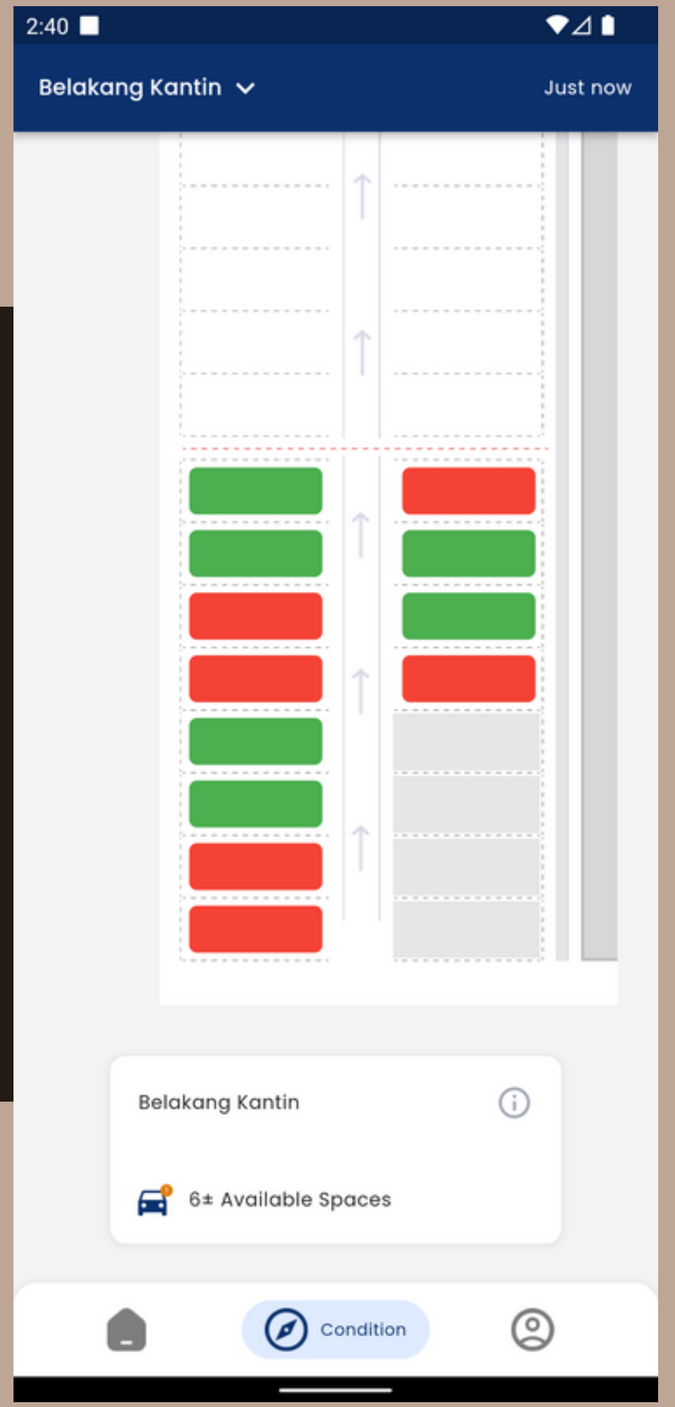
Agung Alfiansyah, Ph.D.

Dosen Pembimbing 2

Helena Widiarti, M.Sc.

PRODUK AKHIR

Sebuah web & aplikasi untuk memantau dan memahami kondisi parkiran secara real-time, dan dalam bentuk gambar yang mudah dipahami.



Presentation by **Nicholas Stancio Saka**

PERMASALAHAN

PERMASALAHAN 1

Survei yang dilakukan oleh Uber menunjukkan bahwa pengendara mobil di Jakarta membutuhkan waktu sekitar 21 hingga 30 menit untuk mencari tempat untuk mereka memarkirkan kendaraan*

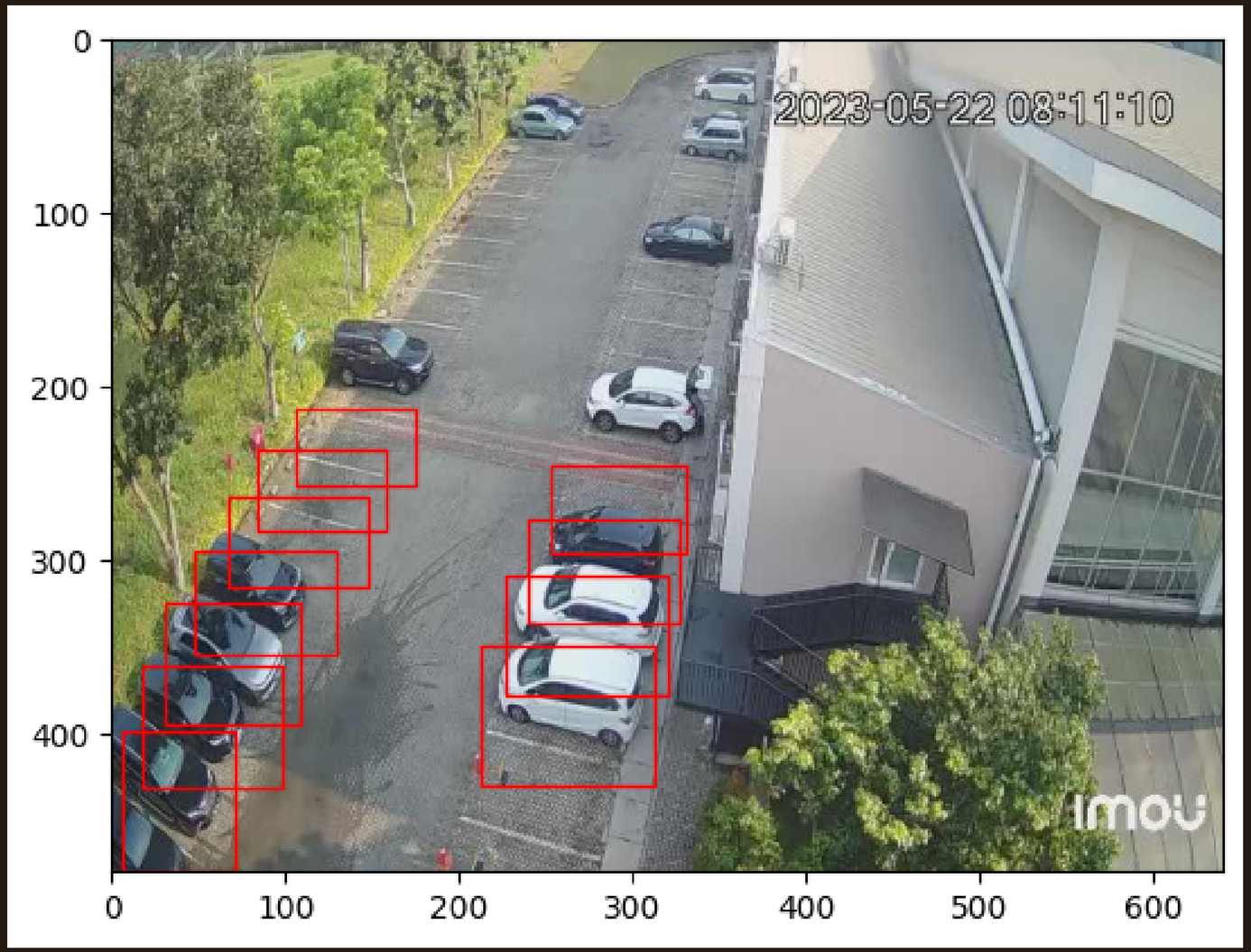
*https://www.viva.co.id/otomotif/1123438-potret-jakarta-setengah-jam-mencari-tempat-parkir

PERMASALAHAN 2

74% responden yang mewakili warga Jakarta mengatakan kesusahan mencari parkir dan macet menjadi faktor utama mereka sering terlambat**

** https://www.brilio.net/serius/berapa-uang-waktu-terbuang-karena-susah-cari-parkir-di-jakarta-190218o.html


iStock
by Getty Images
914026160


0
100
200
300
400
0
100
200
300
400
500
600
2023-05-22 08:11:10
imou

RUMUSAN MASALAH

1. Bagaimana cara melatih machine learning dengan dataset custom untuk melakukan prediksi yang akurat?

2. Bagaimana cara membuat sistem backend yang dapat menerima API serta memprediksi gambar perparkiran?

3. Bagaimana cara transformasi hasil prediksi menjadi data yang kompatibel dengan frontend secara real-time?

4. Bagaimana cara membuat sebuah aplikasi yang dapat menampilkan data prediksi parkiran kepada pengguna secara real-time?

5. Bagaimana proses pengambilan serta pengiriman gambar dari kamera kepada server?

TUJUAN PENELITIAN

1. Melatih model machine learning dengan menggunakan dataset custom.

2. Mengetahui cara membuat sistem backend menggunakan teknologi container dan cloud computing.

3. Mengetahui cara mentransformasi data dan menyimpannya dengan menggunakan sistem database.

4. Mengetahui cara membuat sebuah aplikasi menggunakan framework sehingga prediksi dapat ditampilkan dengan baik kepada pengguna akhir.

5. Mengetahui proses pengambilan gambar parkiran serta pengiriman data ke sistem backend menggunakan perangkat kamera yang sesuai.

BATASAN PENELITIAN

1. Penelitian ini hanya berfokus pada implementasi sistem monitoring parkiran menggunakan machine learning dan tidak membahas metode lain untuk manajemen parkiran.
2. Penelitian ini tidak membahas pengembangan model lain atau menggunakan teknologi lain selain yang telah ditentukan.
3. Penelitian hanya diimplementasikan di parkiran luar ruangan, dan tidak di dalam gedung.
4. Penelitian ini dilakukan hanya dengan menggunakan satu kamera, tanpa memperhitungkan lokasi penempatan kamera.
5. Penelitian ini tidak membahas deteksi parkir sembarang dan paralel.
6. Penelitian ini tidak mencakup aspek legal atau regulasi seputar manajemen parkir.

2

TINJAUAN PUSTAKA

TINJAUAN PUSTAKA

YOLOv5

- Deteksi objek cepat dengan akurasi tinggi
- Versi 5, dibuat oleh ultralytics
- https://github.com/ultralytics/yolov5

AWS EC2

- Menghilangkan kebutuhan mempunyai server fisik
- Flexible, pay as you go

Docker

- Kontainerisasi
- Mempermudah deployment aplikasi dengan kontainer

TINJAUAN PUSTAKA

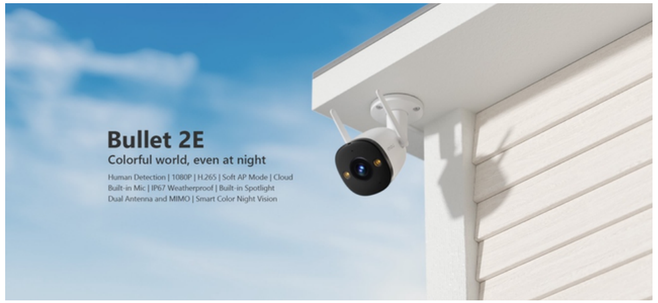
Flutter

- Aplikasi dari satu kode sumber untuk berbagai platform
- Dibuat oleh tim Google

Firebase

- Penyimpanan data berbasis cloud
- Banyak fitur tambahan untuk pembuatan aplikasi
- Dibuat oleh tim Google

Imou

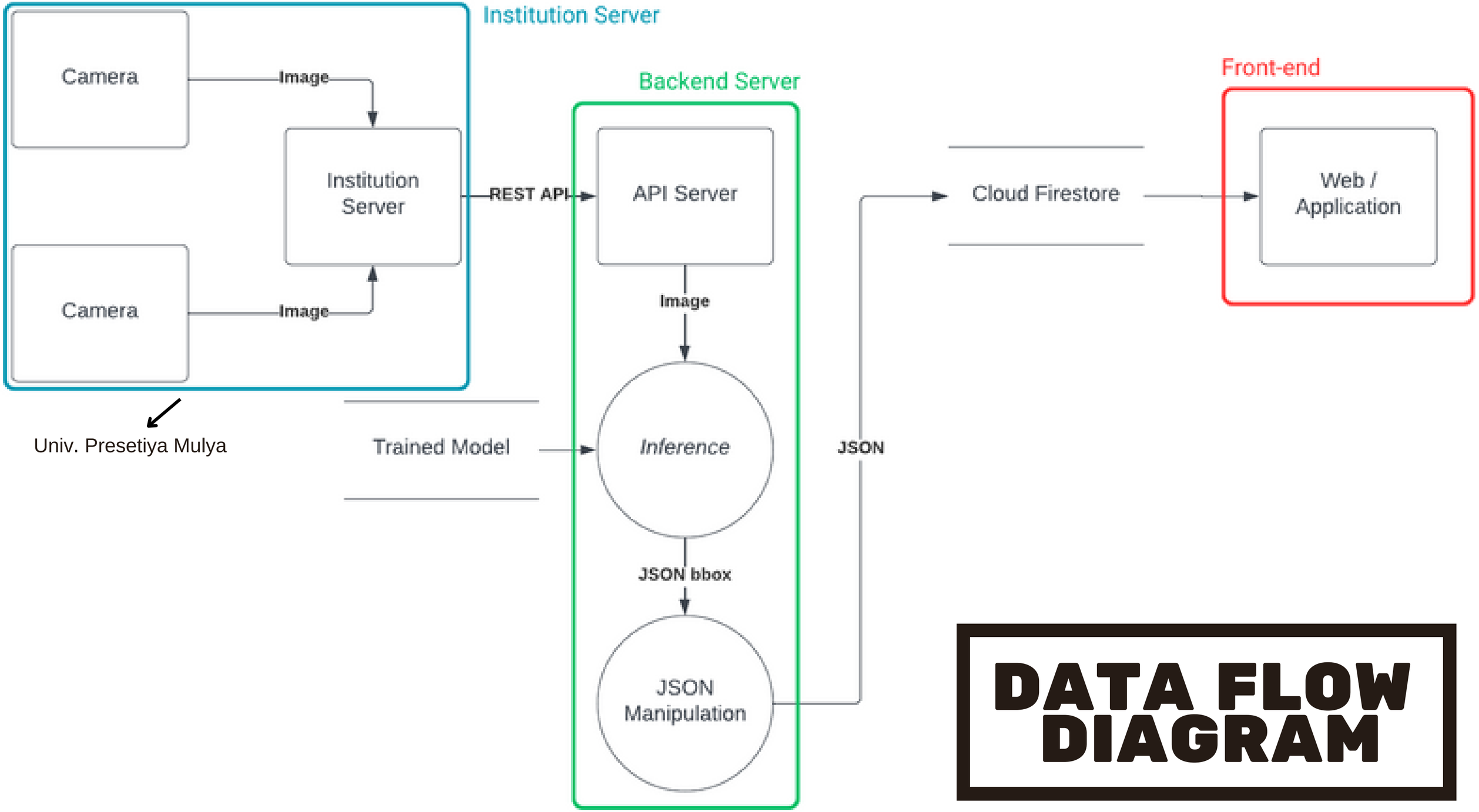


- Imou Smart IP Camera Full Colour Night Vision CCTV Outdoor Wi-Fi Bullet 2E 1080P H.265 IP67 Weatherproof

METODE PENELITIAN

SPESIFIKASI PRODUK

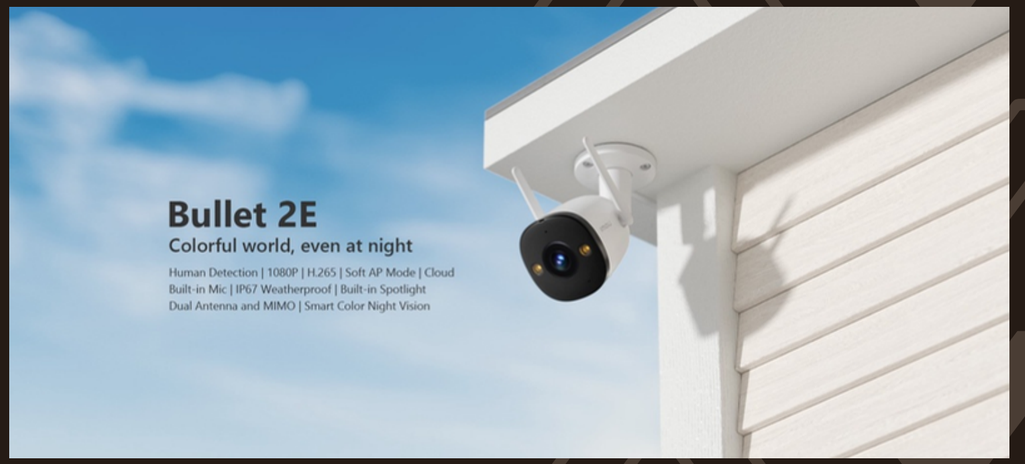
No	Hal	Rincian
1	Produk didapat dengan mudah	Pengguna dapat dengan mudah mendapatkan produk melalui Google Playstore atau web
2	Akurasi model prediksi yang sangat tinggi	Presisi, Recall, dan mAP diatas 99%
3	Server dapat diakses diseluruh Indonesia	Menggunakan Amazon EC2 dan Route 53 untuk memastikan ketersediaan dan aksesibilitas server dari seluruh penjuru Indonesia.
4	Pengguna dapat mudah memahami kondisi parkiran	Pengguna dapat melihat secara detil posisi-posisi parkiran yang kosong dan terisi dalam bentuk gambar yang mudah dipahami.
5	Prediksi real-time	Pengguna dapat melihat kondisi parkiran institusi terkait secara real-time.
6	Ketersediaan aplikasi lintas platform	Pengguna dapat menggunakan produk dengan mudah dalam berbagai perangkat


Institution Server
Camera
Image
Institution Server
Camera
Image
Univ. Presetiya Mulya
REST API
Backend Server
API Server
Image
Trained Model
Inference
JSON bbox
JSON Manipulation
JSON
Cloud Firestore
Front-end
Web / Application
DATA FLOW DIAGRAM

INSTITUTION SERVER

SERVER

1. Hit API Imou get access token (7d)
2. Hit API Imou yng buka live, get HLS url (1d)
3. Gunakan HLS url untuk mengambil gambar (1m)
4. Mengirimkan gambar kepada server backend



IMOU DOCUMENTATION

https://open.imoulife.com/book/http/develop.html
https://open.imoulife.com/book/http/accessToken.html
https://open.imoulife.com/book/http/device/live/bindDeviceLive.html
https://open.imoulife.com/book/http/device/live/unbindLive.html
https://open.imoulife.com/book/http/device/live/liveList.html

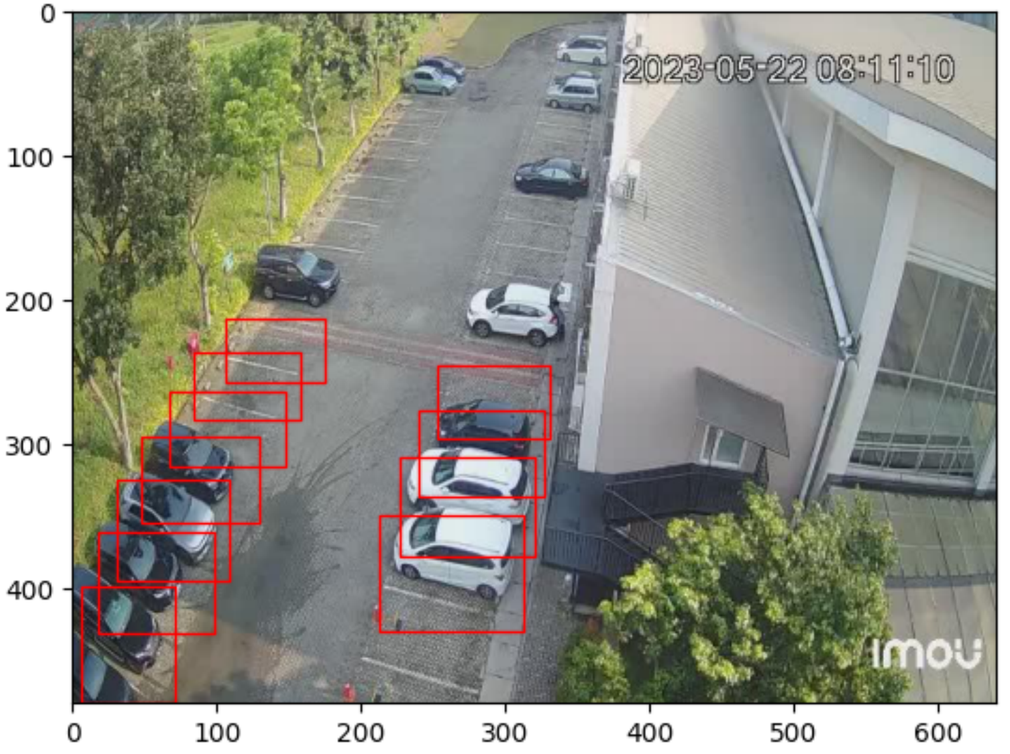
BACK-END SYSTEM

API

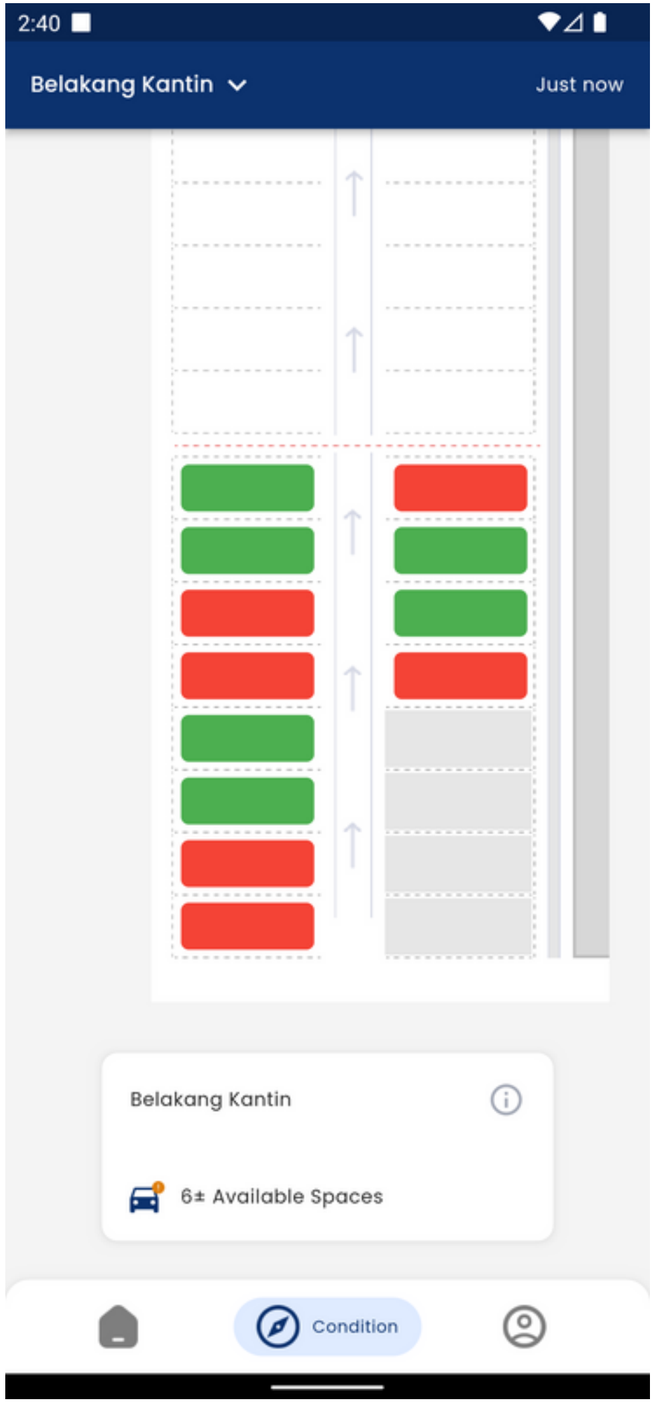
1. Menerima input gambar dari server institusi
2. Memberikan gambar tersebut kedalam bagian *inference*
3. Menerima hasil prediksi dari bagian *inference*.
4. Memanipulasi hasil tersebut.
5. Mengirimkan hasil prediksi kepada Firebase Firestore.

INFERENCE

1. Menerima input gambar dari bagian API
2. Melakukan proses Inference terhadap gambar tersebut untuk mendapatkan prediksi
3. Memberikan hasil prediksi kepada bagian API




```
[
  {
    "class": 1,
    "confidence": 0.9666519165,
    "name": "space-occupied",
    "xmax": 286.2836303711,
    "xmin": 225.1885528564,
    "ymax": 342.3432006836,
    "ymin": 270.5919799805
  },
  {
    "class": 0,
    "confidence": 0.965503633,
    "name": "space-empty",
    "xmax": 313.5863647461,
    "xmin": 245.5210418701,
    "ymax": 404.8903503418,
    "ymin": 325.4344787598
  }
]
```




```
[
  {
    "id": "PUPM1A110001",
    "confidence": 0.9666519165,
    "is_invalid": false,
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    "position_number": 1
  },
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    "is_invalid": false,
    "is_occupied": false,
    "position_number": 2
  }
]
```


[
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"confidence": 0.9666519165,
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"xmin": 225.1885528564,
"ymax": 342.3432006836,
"ymin": 270.5919799805
},
{
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"name": "space-empty",
"xmax": 313.5863647461,
"xmin": 245.5210418701,
"ymax": 404.8903503418,
"ymin": 325.4344787598
}
]
[
{
"id": "PUPM1A110001",
"confidence": 0.9666519165,
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"is_occupied": true,
"position_number": 1
},
{
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"confidence": 0.965503633,
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"is_occupied": false,
"position_number": 2
}
]

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    "data": [
        {
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                "expected_coordinates_range": {
                    "x_min": 351.98263549805,
                    "y_min": -0.9416193962000019,
                    "x_max": 375.98263549805,
                    "y_max": 23.058380603799996
                },
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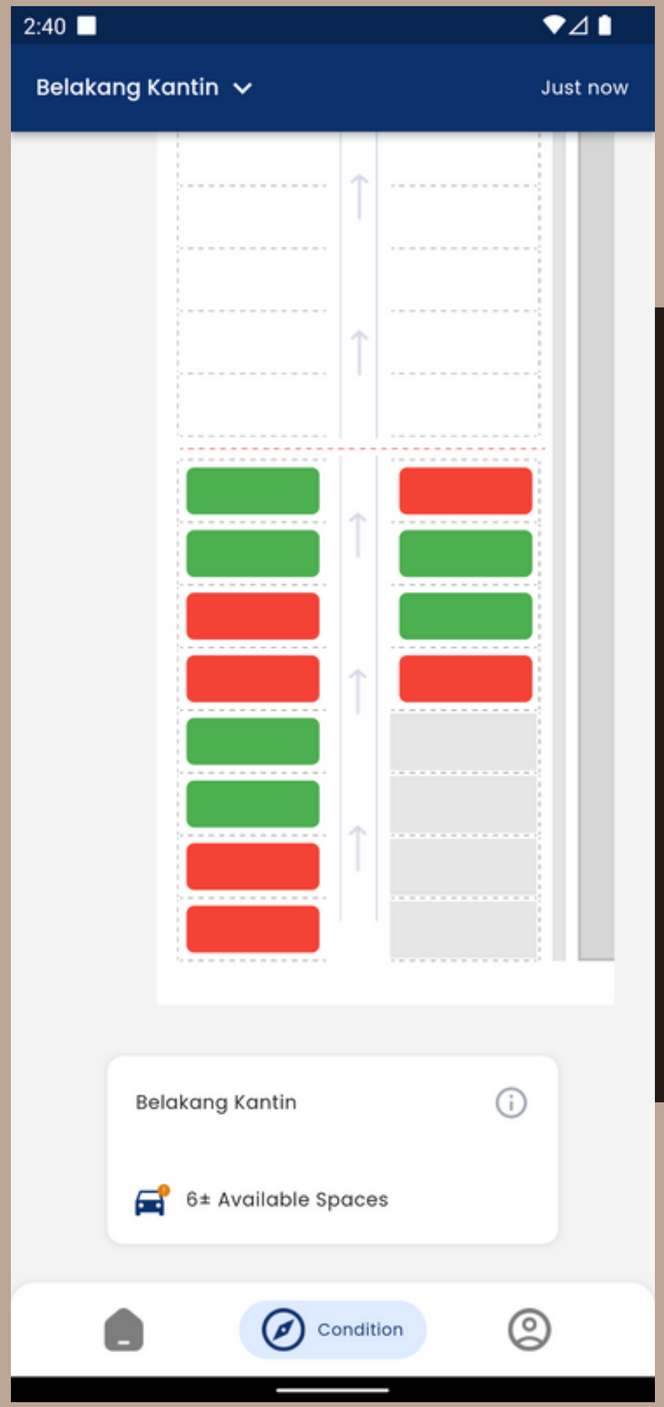
                    "x": 363.98263549805,
                    "y": 11.058380603799998
                }
            },
            "id": "PUPM1A110001",
            "position_number": 1
        },
        ...
    ]
}
```


2022-05-05 15:22:41
imou



FRONT-END

Menampilkan dan menyajikan hasil prediksi yang kepada pengguna akhir secara real-time dan dalam bentuk gambar yang mudah dipahami

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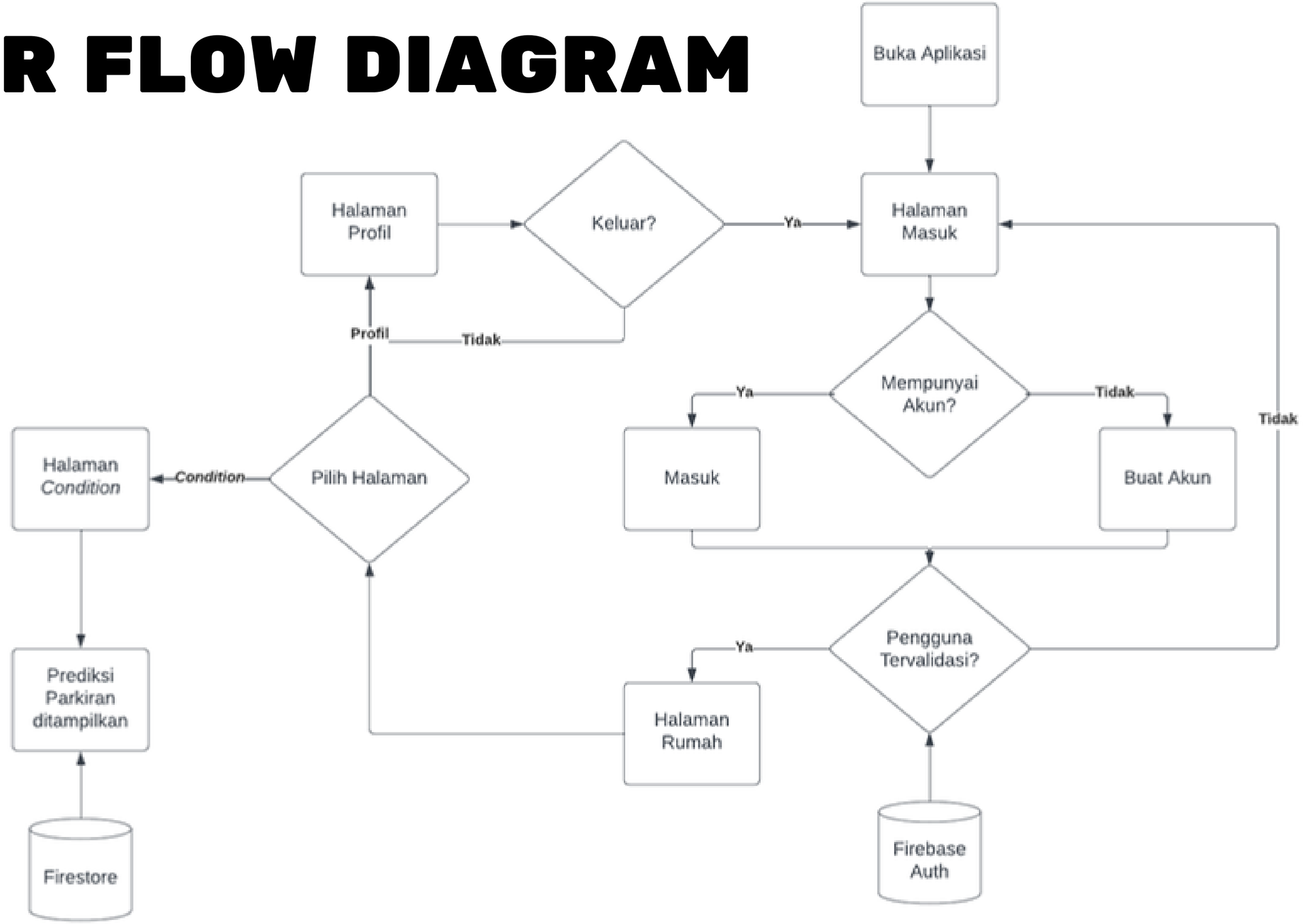
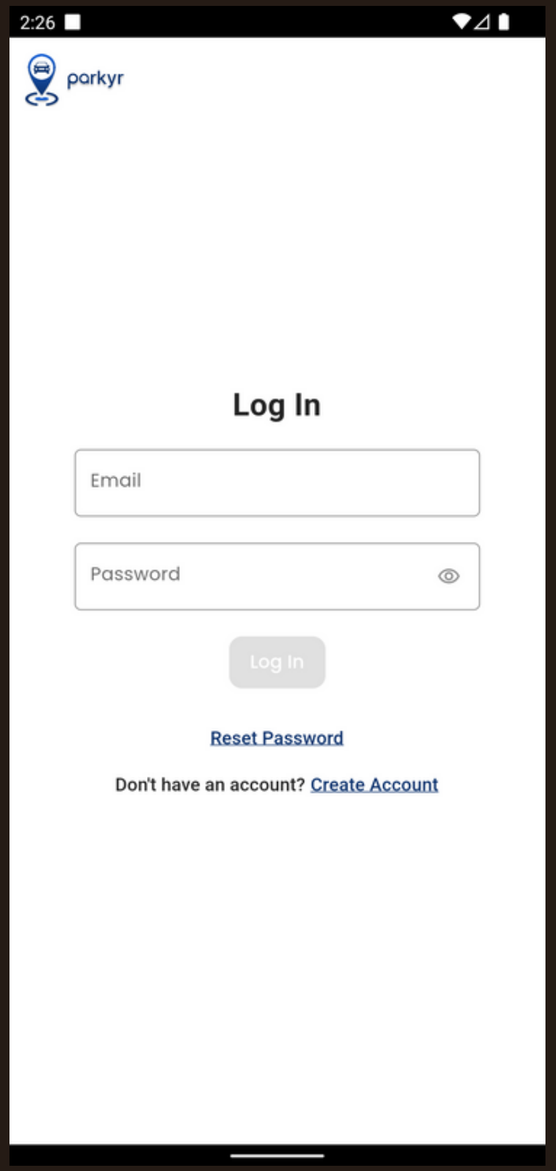
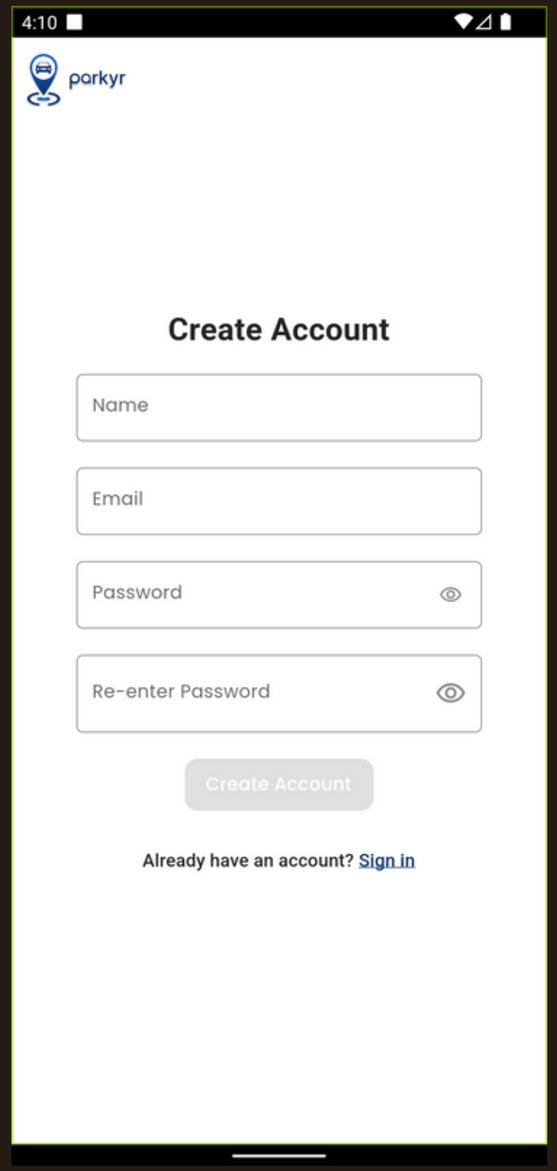
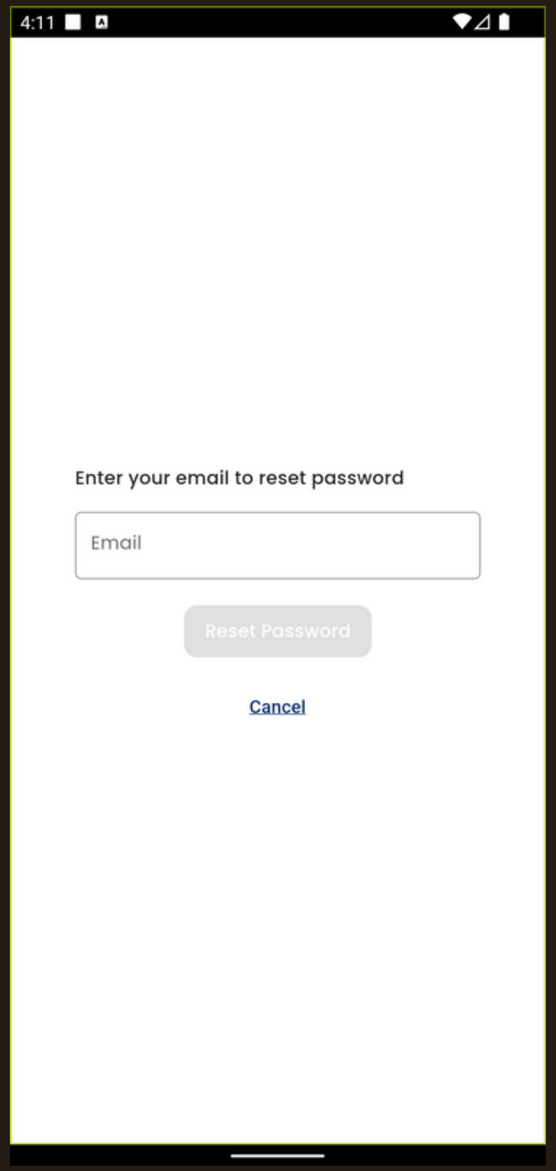
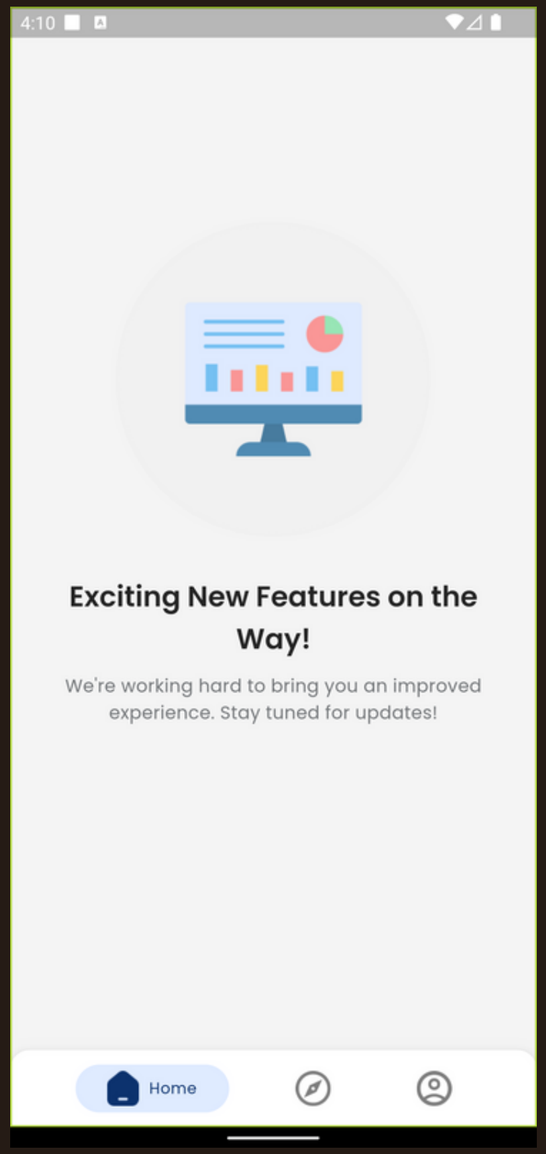
USER FLOW DIAGRAM



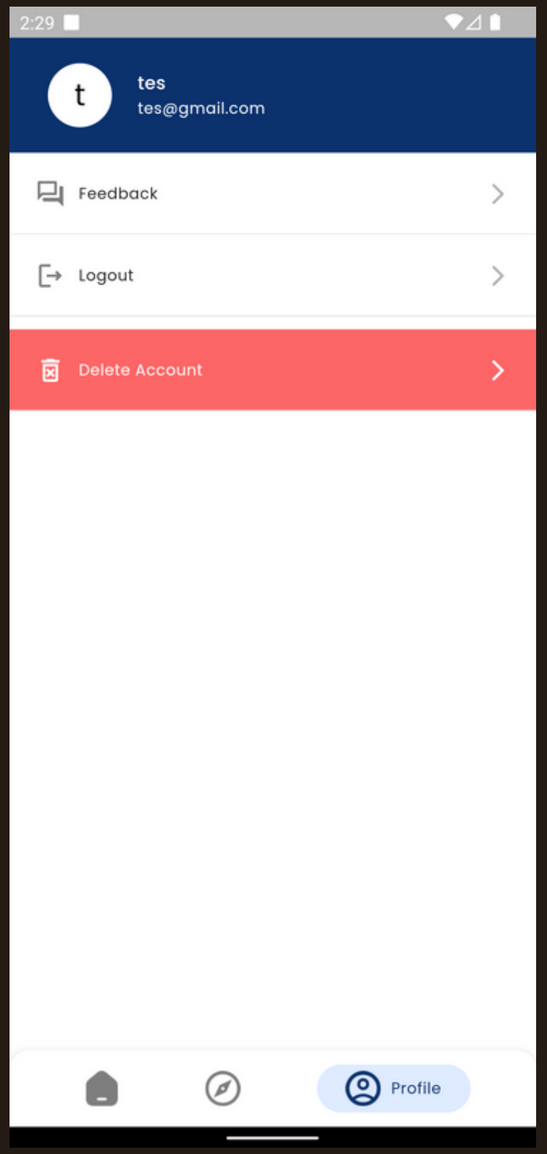

2:26
parkyr
Log In
Email
Password
Log In
Reset Password
Don't have an account? Create Account


4:10
parkyr
Create Account
Name
Email
Password
Re-enter Password
Create Account
Already have an account? Sign in


4:11
Enter your email to reset password
Email
Reset Password
Cancel


4:10
Exciting New Features on the Way!
We're working hard to bring you an improved experience. Stay tuned for updates!
Home


2:40
Belakang Kantin
Just now
Belakang Kantin
6± Available Spaces
Condition

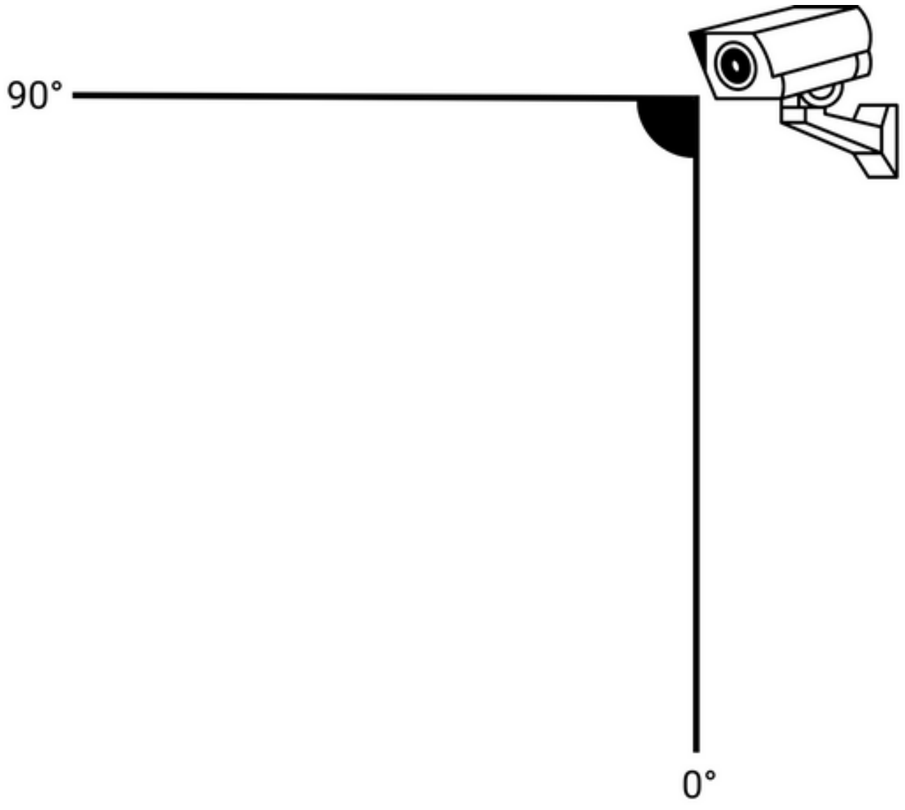

2:29
t
tes
tes@gmail.com
Feedback
Logout
Delete Account
Profile

PROSES PENGEMBANGAN PRODUK

1. Pemasangan Kamera
2. Pengambilan Data Pelatihan
3. Anotasi Gambar
4. Pelatihan Menggunakan YOLOv5
5. Development & Deployment Server Institusi
6. Development & Deployment Server Backend
7. Development & Deployment Frontend

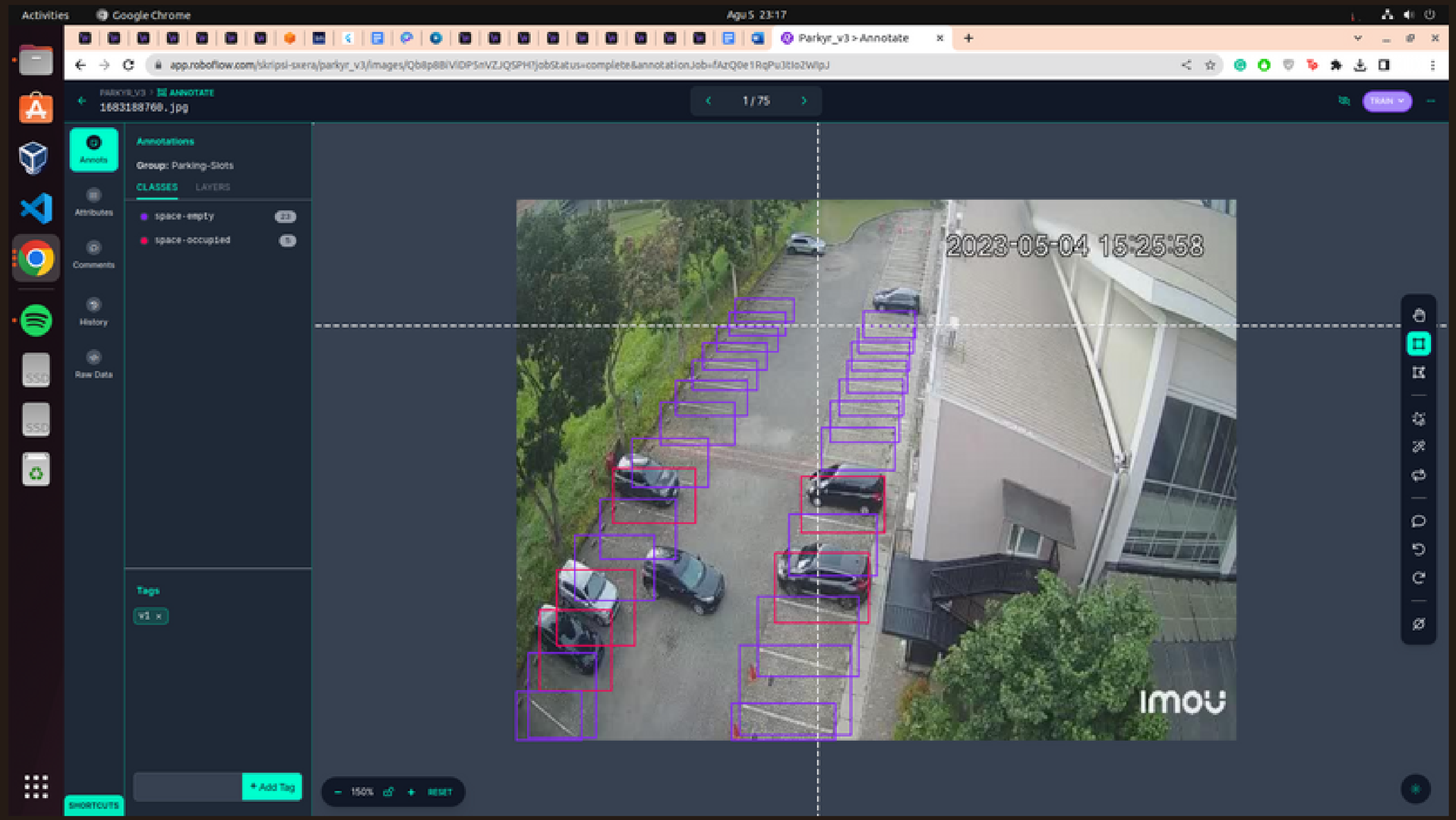
1. Pemasangan Kamera

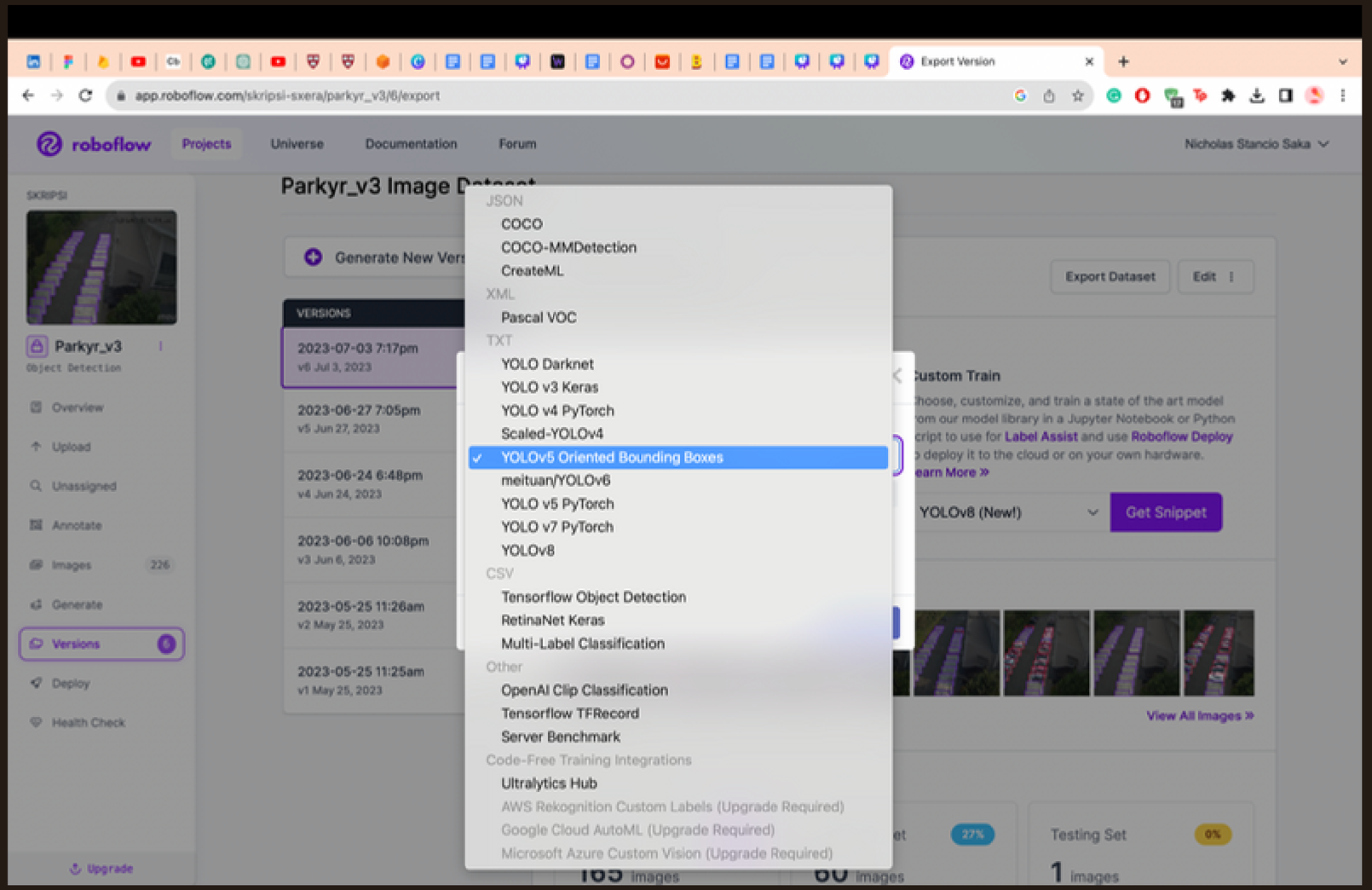
Lokasi: Atas gedung Dosen
Angle: ±45 deg
Ketinggian: Rooftop (lt 5)

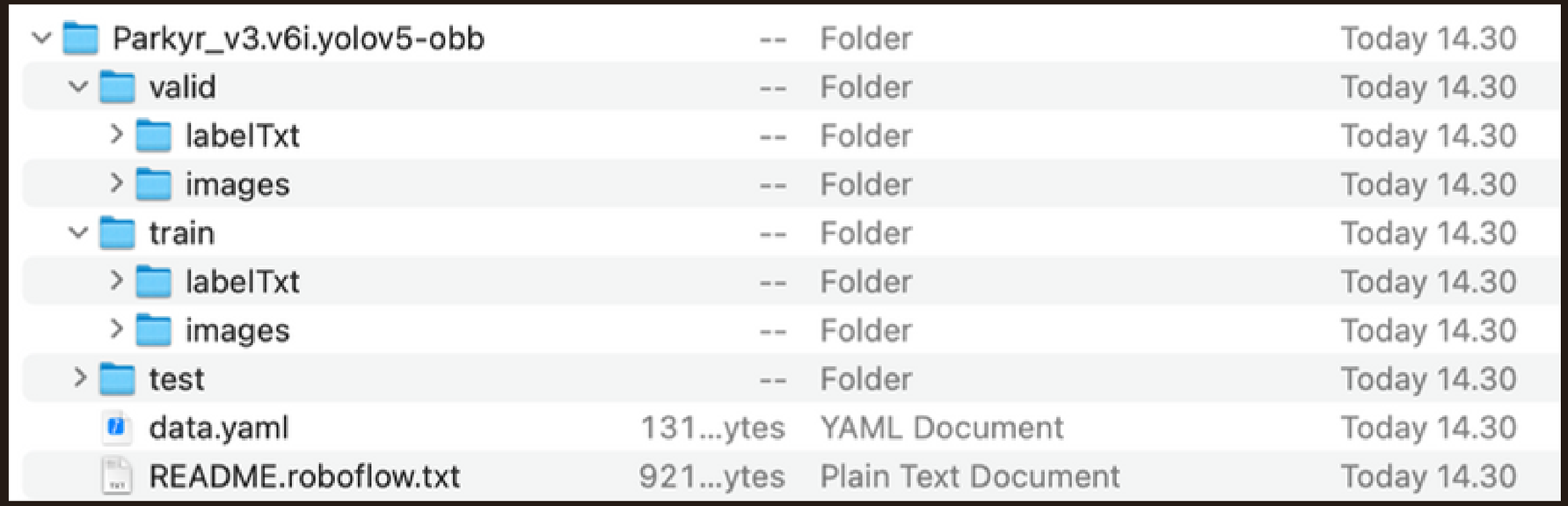

90°
0°

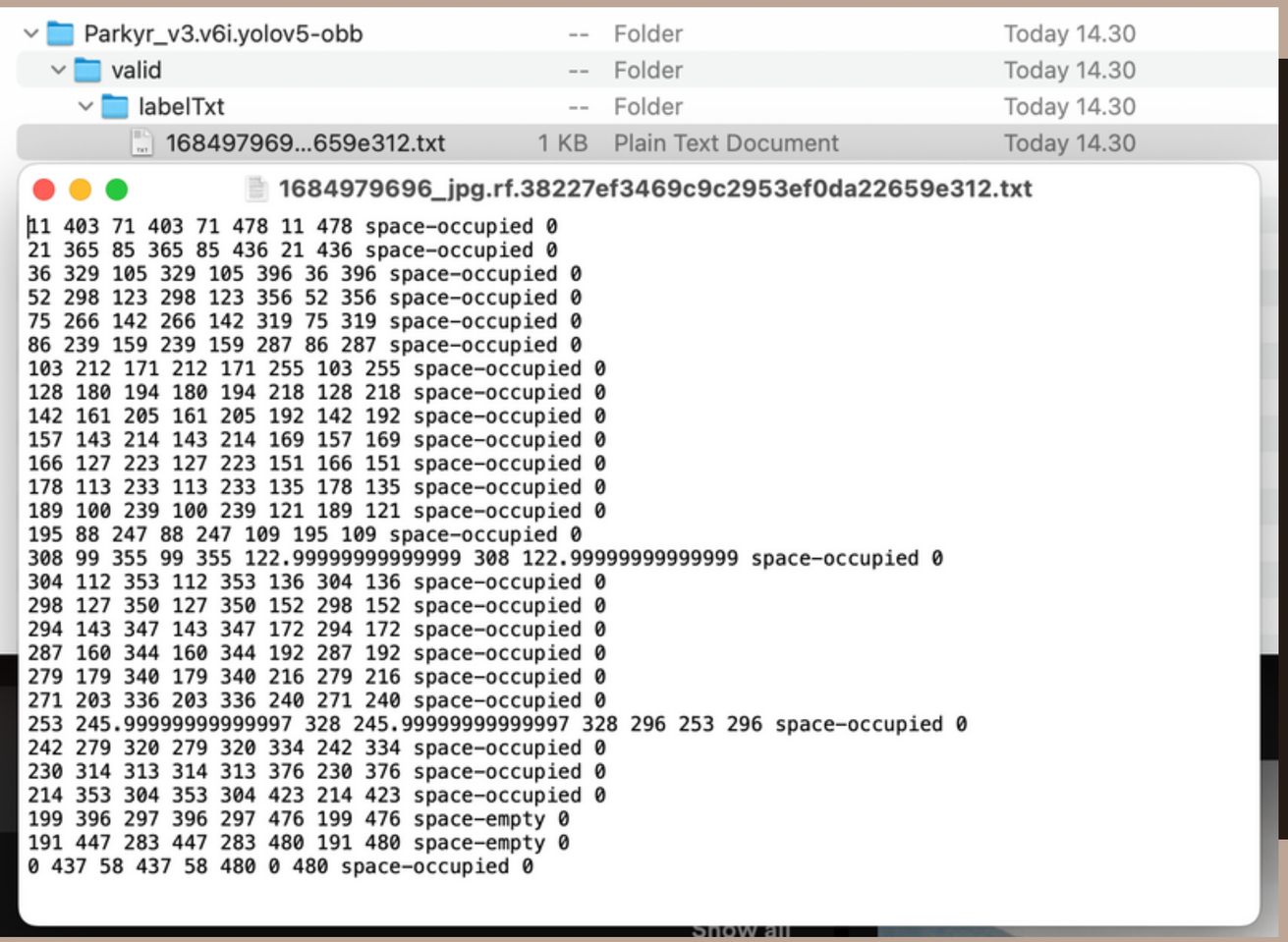
2. Pengambilan Data Pelatihan

3. Anotasi Gambar




Export Version
app.roboflow.com/skripsi-sxera/parkyr_v3/6/export
roboflow
Projects
Universe
Documentation
Forum
Nicholas Stancio Saka
SKRIPSI
Parkyr_v3
Object Detection
Overview
Upload
Unassigned
Annotate
Images 226
Generate
Versions 6
Deploy
Health Check
Upgrade
Parkyr_v3 Image Dataset
Generate New Vers
VERSIONS
2023-07-03 7:17pm
v6 Jul 3, 2023
2023-06-27 7:05pm
v5 Jun 27, 2023
2023-06-24 6:48pm
v4 Jun 24, 2023
2023-06-06 10:08pm
v3 Jun 6, 2023
2023-05-25 11:26am
v2 May 25, 2023
2023-05-25 11:25am
v1 May 25, 2023
Export Dataset
Edit
JSON
COCO
COCO-MMDetection
CreateML
XML
Pascal VOC
TXT
YOLO Darknet
YOLO v3 Keras
YOLO v4 PyTorch
Scaled-YOLOv4
YOLOv5 Oriented Bounding Boxes
meituan/YOLOv6
YOLO v5 PyTorch
YOLO v7 PyTorch
YOLOv8
CSV
Tensorflow Object Detection
RetinaNet Keras
Multi-Label Classification
Other
OpenAI Clip Classification
Tensorflow TFRecord
Server Benchmark
Code-Free Training Integrations
Ultralytics Hub
AWS Rekognition Custom Labels (Upgrade Required)
Google Cloud AutoML (Upgrade Required)
Microsoft Azure Custom Vision (Upgrade Required)
Custom Train
Label Assist
Roboflow Deploy
Learn More »
YOLOv8 (New!)
Get Snippet
View All Images »
27%
Testing Set
0%
1 images


Parkyr_v3.v6i.yolov5-obb -- Folder Today 14.30
valid -- Folder Today 14.30
labelTxt -- Folder Today 14.30
images -- Folder Today 14.30
train -- Folder Today 14.30
labelTxt -- Folder Today 14.30
images -- Folder Today 14.30
test -- Folder Today 14.30
data.yaml 131...ytes YAML Document Today 14.30
README.roboflow.txt 921...ytes Plain Text Document Today 14.30



ROBOFLOW

"11 403 71 403 71 478 11 478": Koordinat bounding box ->
(11, 403), (71, 403), (71, 478), (11, 478).

"space-occupied": Nama Class

4. Pelatihan Menggunakan YOLOv5

Training Data using YOLOv5

In [9]:
```
# Install required module
# !pip install ultralytics
```

In [10]:
```
# Setup
import torch
import os
from IPython.display import Image, clear_output  # to display images

print(f"Setup complete. Using torch {torch.__version__} ({torch.cuda.get_device_properties(0).name if torch.cuda.is
```

```
Setup complete. Using torch 2.0.0 (NVIDIA GeForce RTX 2070)
```

- Added the --workers 8 argument to use 8 CPU worker threads for data loading. This will help utilize your CPU resources more efficiently during training.
- Added the --cache argument to cache the dataset images in RAM for faster training. Since you have 64 GB of system RAM, you should have enough memory to cache the PKLot dataset.

In [14]:
```
model_name = 'general_parking/general_parking250' # Change this for new training

# img_size = 350
# img_size = 480
img_size = 640
batch_size = 1
epochs = 250
data_yaml = f'{manipulated_directory}/data.yaml'
weights_initial = 'yolov5s.pt'
experiment_folder = os.path.join(base_path, 'runs/train')  # Update with your experiment folder path

weights_last = f'{experiment_folder}/{model_name}/weights/last.pt'

if os.path.exists(weights_last):
    # Resume Training
    !python train.py --img {img_size} --batch {batch_size} --epochs {epochs} --data '{data_yaml}' --resume {weights_
else:
    # Start Training
    !python train.py --img {img_size} --batch {batch_size} --epochs {epochs} --data '{data_yaml}' --cfg ./models/yo
```

Spesifikasi

Pelatihan menggunakan komputer lokal peneliti dengan spek:

- **CPU:** Intel i7 gen 11
- **GPU:** NVIDIA GeForce RTX 2070
- **RAM:** 64
- **CPU Worker:** 8

5. DEVELOPMENT & DEPLOYMENT SERVER INSTITUSI

Menggunakan server Universitas Prasetiya Mulya

Container 1: camera-server

- **Bahasa Pemograman:** golang:1.19.1-bullseye
- **Framework:** Gin Web Framework

6. DEVELOPMENT & DEPLOYMENT SERVER BACKEND

Menggunakan server AWS EC2 t3A.small

Container 1: api-server

- **Bahasa Pemograman:** golang:1.19.1-bullseye
- **Framework:** Gin Web Framework

Container 2: inference-server

- **Bahasa Pemograman:** python:3.10.7-bullseye
- **Framework:** Flask

7. DEVELOPMENT & DEPLOYMENT FRONTEND

- **Bahasa Pemograman:** Dart
- **Framework:** Flutter
- **Database:** Firebase Firestore
- **Autentikasi:** Firebase Authentication
- **Compatibility:** Mobile, Tablet, Laptop, PC
- **Release:** Android, iOS (dev), Web

4

HASIL DAN PEMBAHASAN

HASIL

YOLOv5 & Server Institusi

- Akurasi model prediksi yang sangat tinggi
- Model berhasil di implementasi pada server
- Server berhasil di-deploy pada server Universitas Prasetiya Mulya (CSE)
- Server berjalan lancar selama lebih dari 1 bulan

Server Backend

- Server dapat diakses diseluruh Indonesia
- Prediksi *real-time*
- Server berhasil di-deploy pada server AWS EC2
- Server berjalan lancar selama lebih dari 2 bulan

Aplikasi

- Produk didapat dengan mudah
- Terdapat peta yang dapat membantu pengguna lebih mudah memahami kondisi parkiran.
- Berhasil deploy di Google Play Store dan Website

YOLOV5

Images:

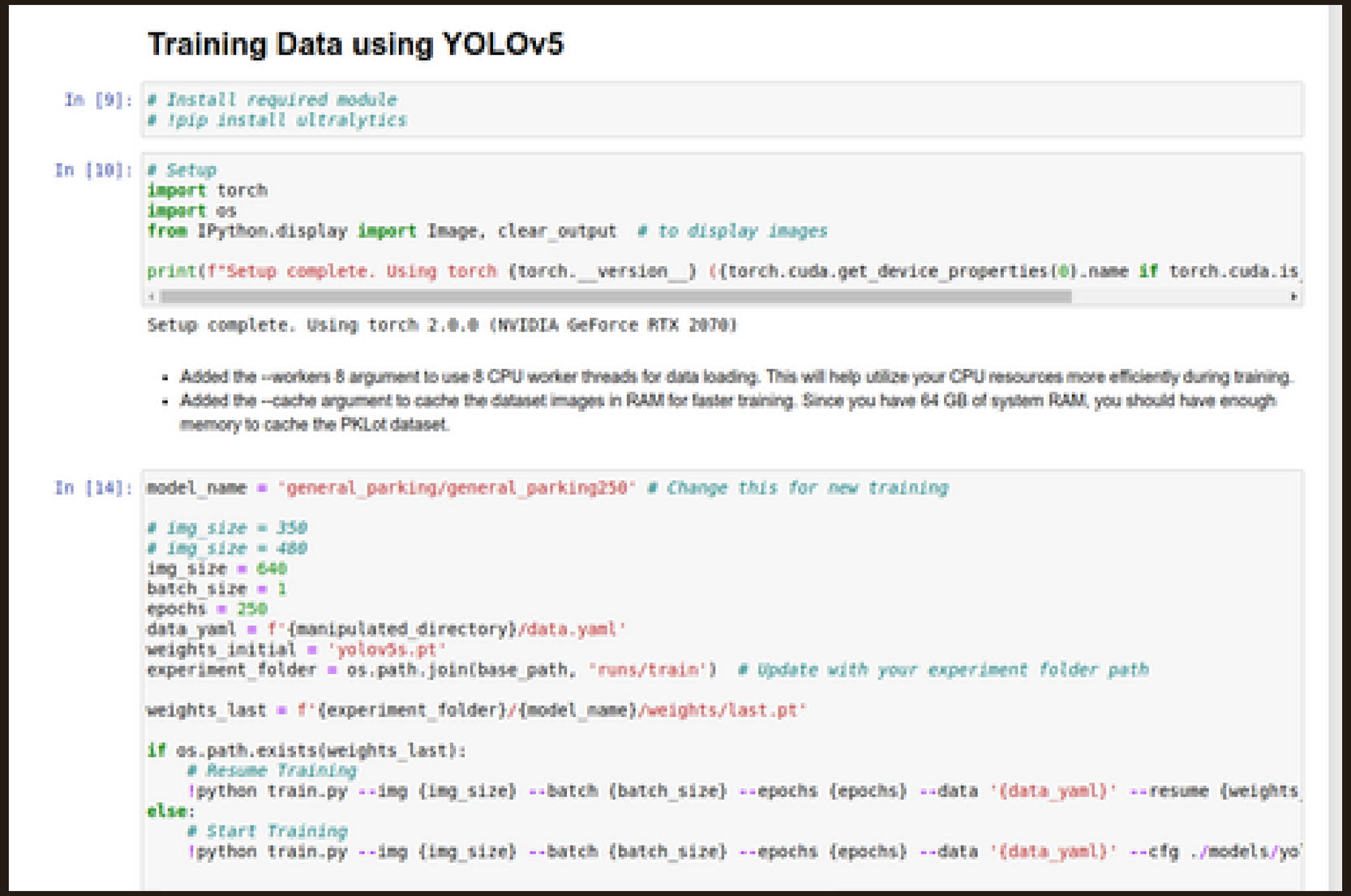
- Training: 165 gambar
- Valid: 60 gambar

Class Instance (11 lot):

- “space-empty”: 1429
- “space-occupied”: 1057

Training configuration:

- Ukuran gambar: 350
- Ukuran batch: 1
- Jumlah epoch: 1000
- Patience: 100



Training Data using YOLOv5

In [9]:
```
# Install required module
# !pip install ultralytics
```

In [10]:
```
# Setup
import torch
import os
from IPython.display import Image, clear_output  # to display images

print(f"Setup complete. Using torch {torch.__version__} ({torch.cuda.get_device_properties(0).name if torch.cuda.is
```

```
Setup complete. Using torch 2.0.0 (NVIDIA GeForce RTX 2070)
```

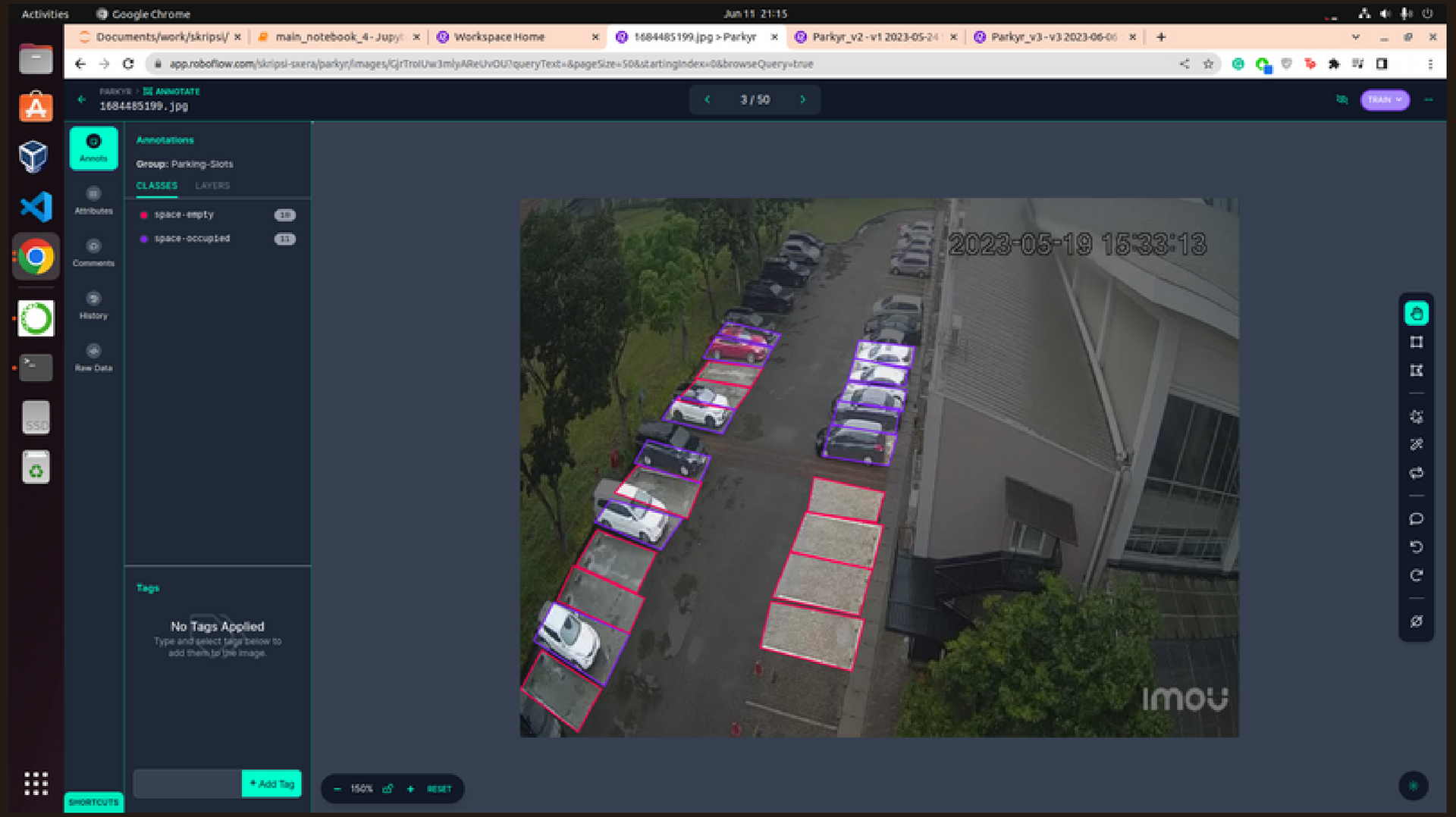
- Added the --workers 8 argument to use 8 CPU worker threads for data loading. This will help utilize your CPU resources more efficiently during training.
- Added the --cache argument to cache the dataset images in RAM for faster training. Since you have 64 GB of system RAM, you should have enough memory to cache the PKLot dataset.

In [14]:
```
model_name = 'general_parking/general_parking250' # Change this for new training

# img_size = 350
# img_size = 480
img_size = 640
batch_size = 1
epochs = 250
data_yaml = f'{manipulated_directory}/data.yaml'
weights_initial = 'yolov5s.pt'
experiment_folder = os.path.join(base_path, 'runs/train')  # Update with your experiment folder path

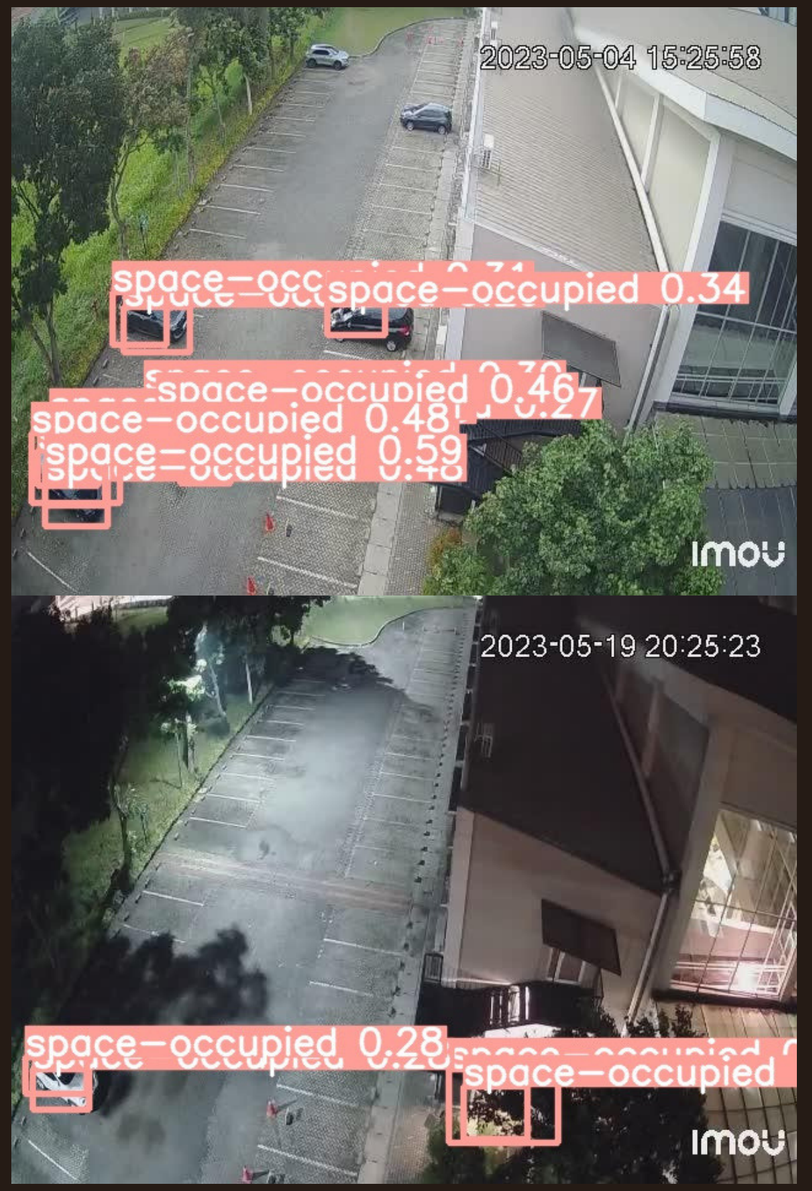
weights_last = f'{experiment_folder}/{model_name}/weights/last.pt'

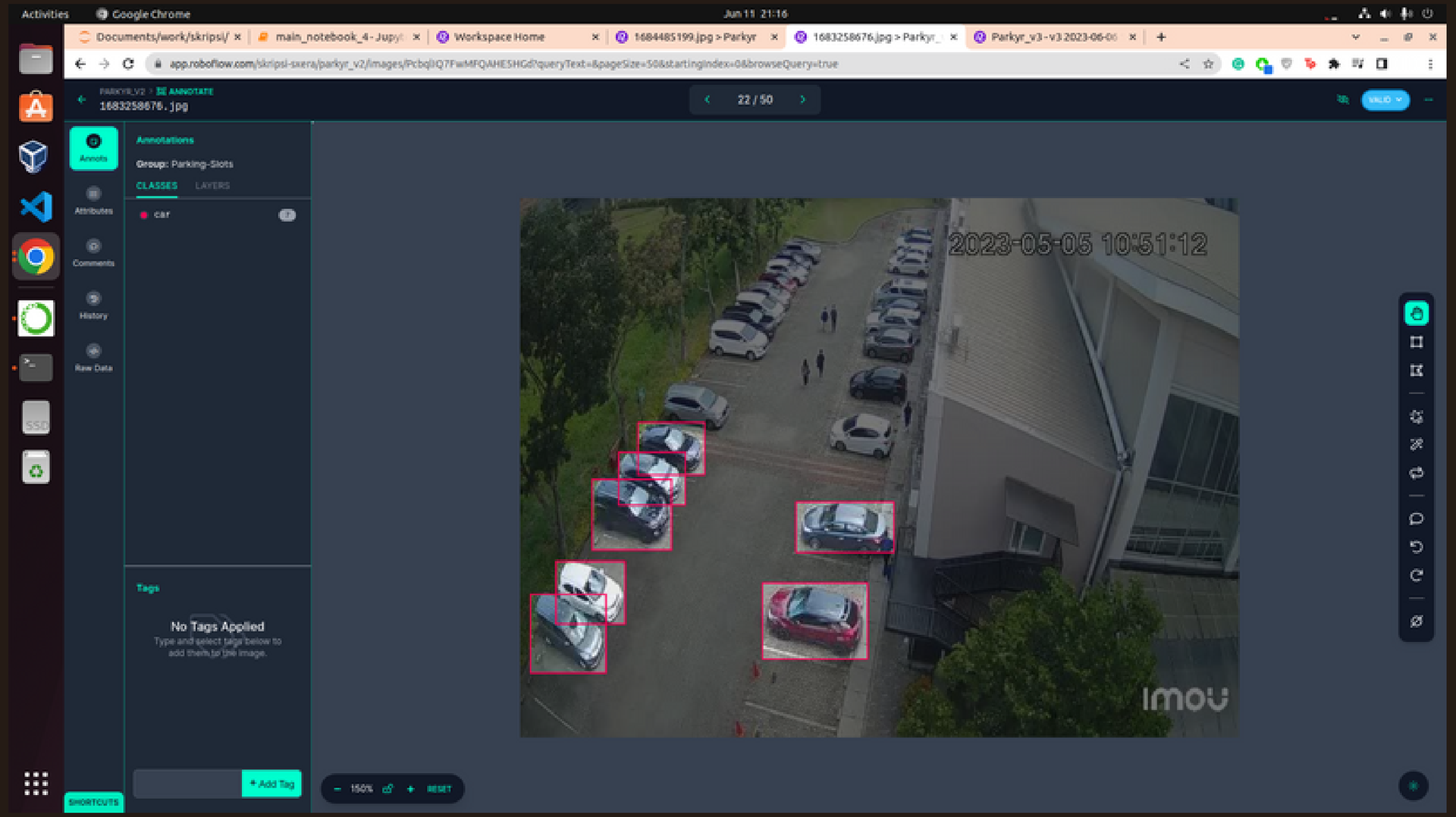
if os.path.exists(weights_last):
    # Resume Training
    !python train.py --img {img_size} --batch {batch_size} --epochs {epochs} --data '{data_yaml}' --resume {weights
else:
    # Start Training
    !python train.py --img {img_size} --batch {batch_size} --epochs {epochs} --data '{data_yaml}' --cfg ./models/yo
```


Activities
Google Chrome
Jun 11 21:15
Documents/work/skripsi/
main_notebook_4 - Jupyt
Workspace Home
1684485199.jpg > Parkyr
Parkyr_v2 - v1 2023-05-24
Parkyr_v3 - v3 2023-06-06
app.roboflow.com/skripsi-sxers/parkyr/images/GjrTroIUw3mlyARxUvOU?queryText=&pageSize=50&startingIndex=0&browseQuery=true
PARKYR
ANNOTATE
1684485199.jpg
3 / 50
TRAIN
Annots
Attributes
Comments
History
Raw Data
Annotations
Group: Parking-Slots
CLASSES
LAYERS
space-empty
space-occupied
Tags
No Tags Applied
Type and select tags below to add them to the image.
+ Add Tag
SHORTCUTS
2023-05-19 15:33:13
imou
150%
RESET

RESULT

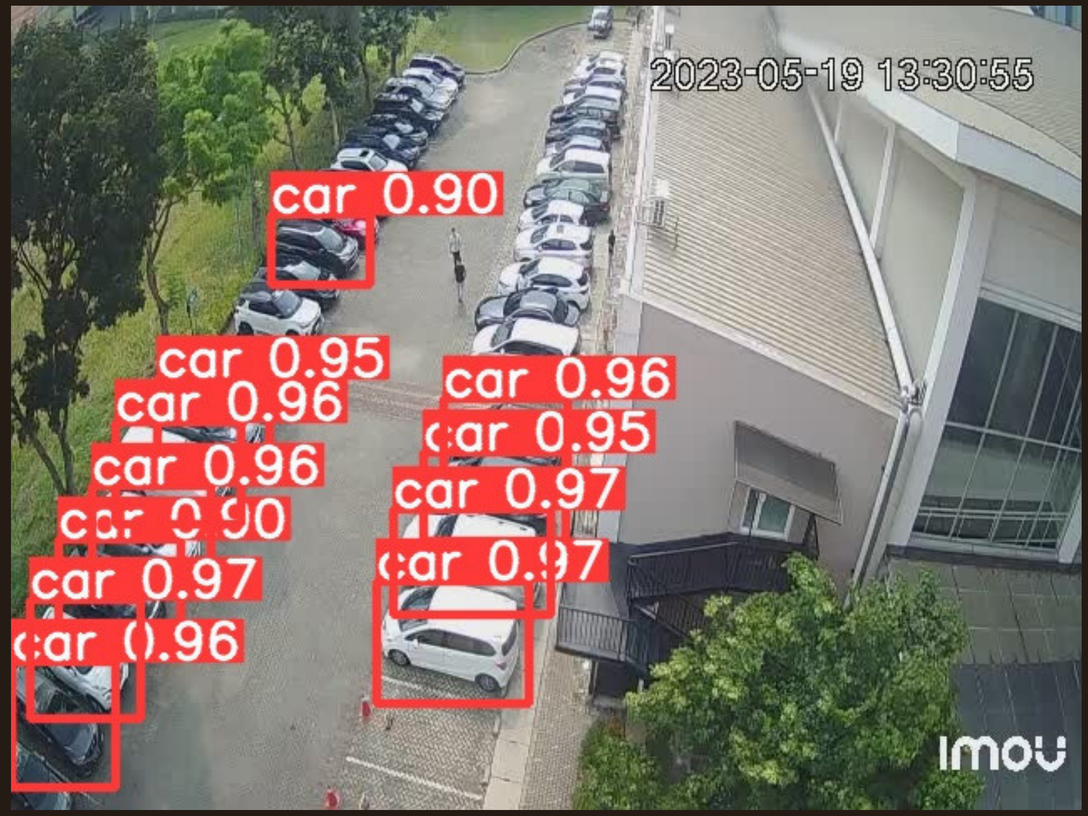
- Only 1 class detected (space-occupied)
- Very low confidence
- Very low MAP

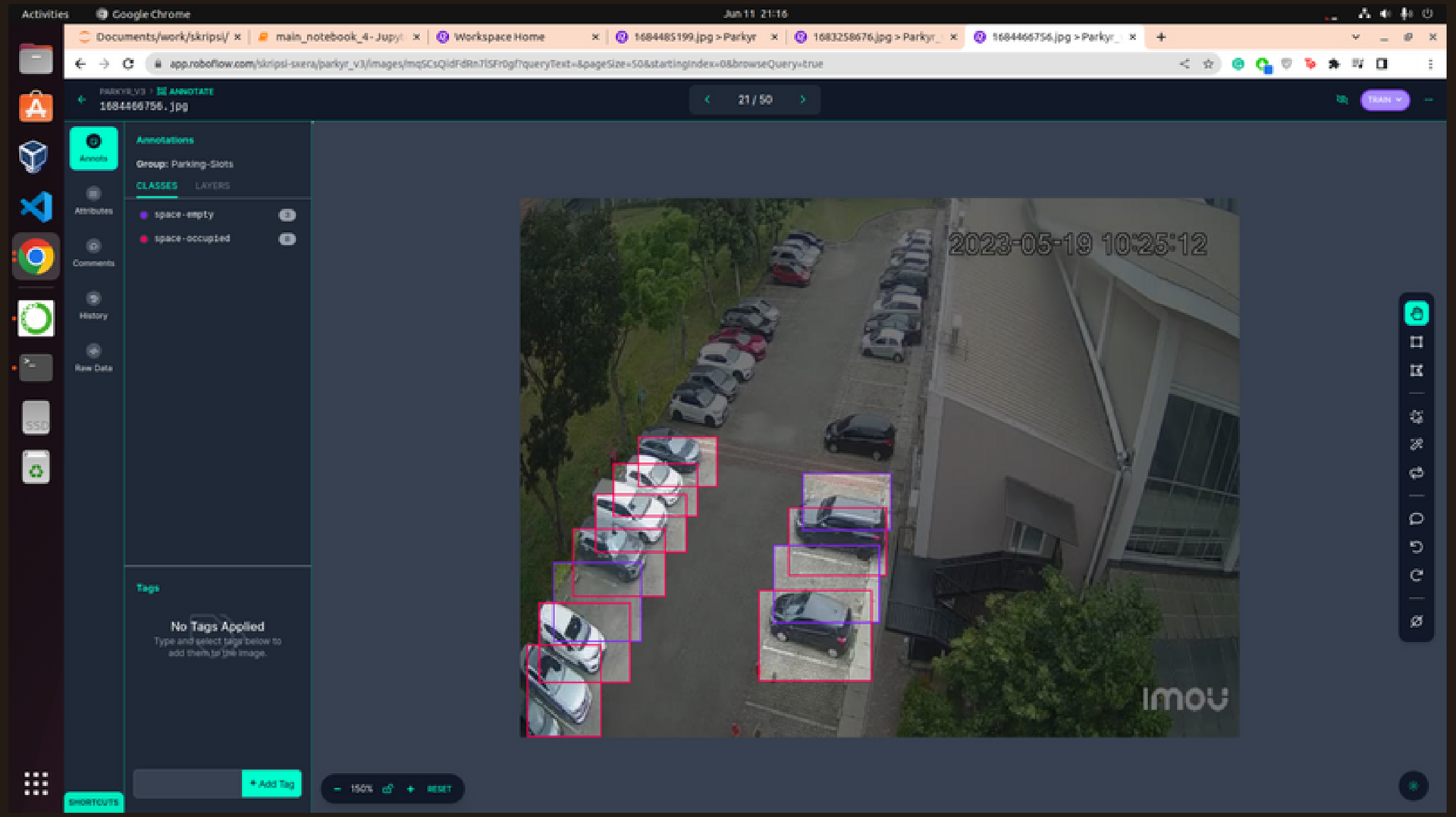


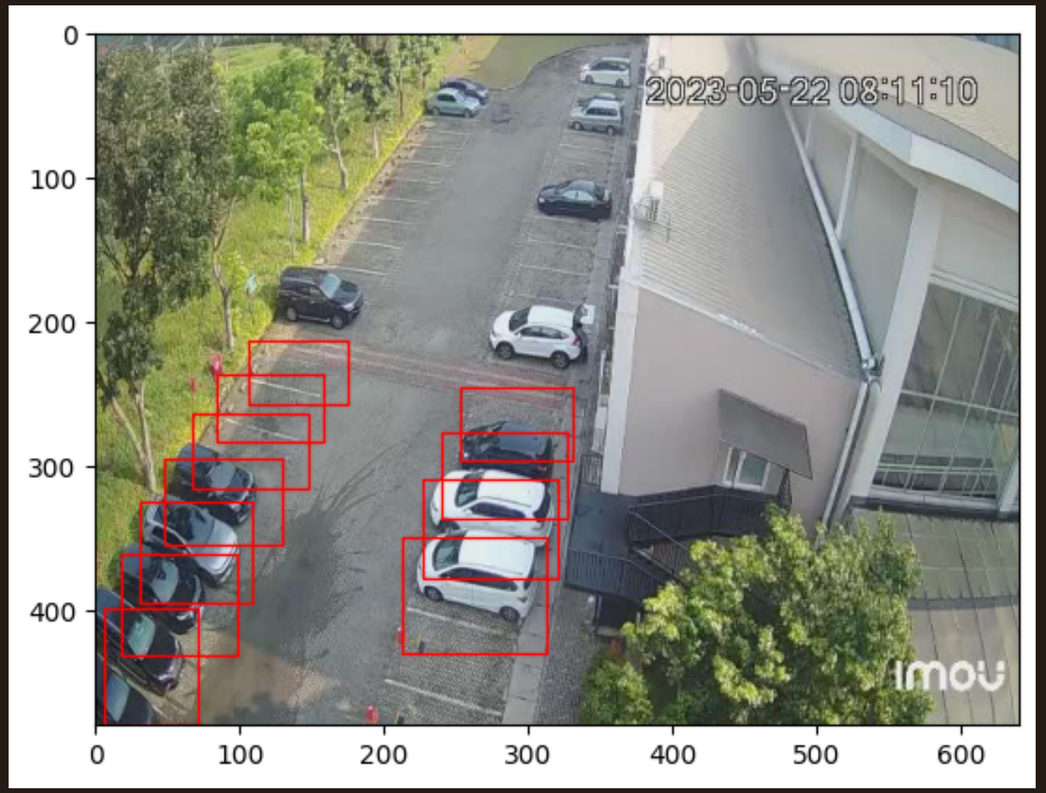

Activities
Google Chrome
Jun 11 21:16
Documents/work/skripsi/
main_notebook_4 - Jupyt
Workspace Home
1684485199.jpg > Parkyr
1683258676.jpg > Parkyr
Parkyr_v3 - v3 2023-06-0
app.roboflow.com/skripsi-sxers/parkyr_v2/images/PcbqIIQ7FwMFQAHE5HGd?queryText=&pageSize=50&startingIndex=0&browseQuery=true
PARKYR_V2
ANNOTATE
1683258676.jpg
22 / 50
VALID
Annots
Attributes
Comments
History
Raw Data
Annotations
Group: Parking-Slots
CLASSES
LAYERS
car
7
Tags
No Tags Applied
Type and select tags below to add them to the image.
+ Add Tag
SHORTCUTS
2023-05-05 10:51:12
imou
150%
RESET

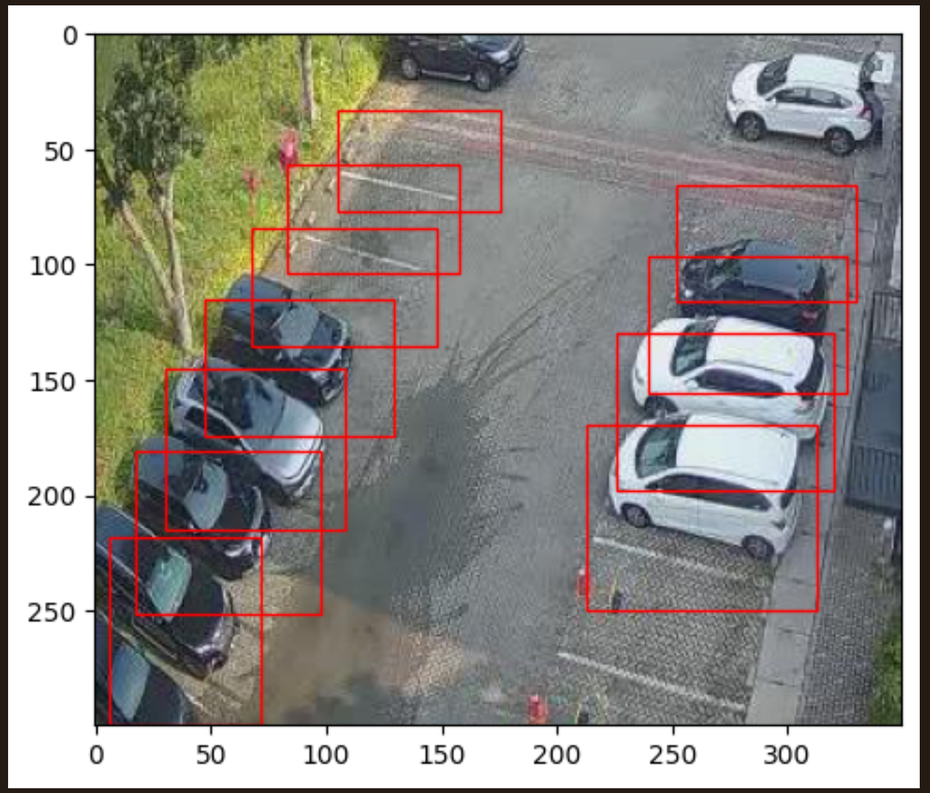
RESULT

- Only 1 class supported (space-occupied)
- Very high confidence
- Very high MAP




Activities
Google Chrome
Jun 11 21:16
Documents/work/skripsi/
main_notebook_4 - Jupyt
Workspace Home
1684485199.jpg > Parkyr
1683258676.jpg > Parkyr
1684466756.jpg > Parkyr
app.roboflow.com/skripsi-ssers/parkyr_v3/images/mqSCsQidFdRnTlSFr0gf?queryText=&pageSize=50&startingIndex=0&browseQuery=true
PARKYR_V3
ANNOTATE
1684466756.jpg
21 / 50
TRAIN
Annots
Attributes
Comments
History
Raw Data
Annotations
Group: Parking-Slots
CLASSES
LAYERS
space-empty
space-occupied
Tags
No Tags Applied
Type and select tags below to add them to the image.
+ Add Tag
SHORTCUTS
2023-05-19 10:25:12
imou
150%
RESET


2023-05-22 08:11:10
imou
0
100
200
300
400
500
600

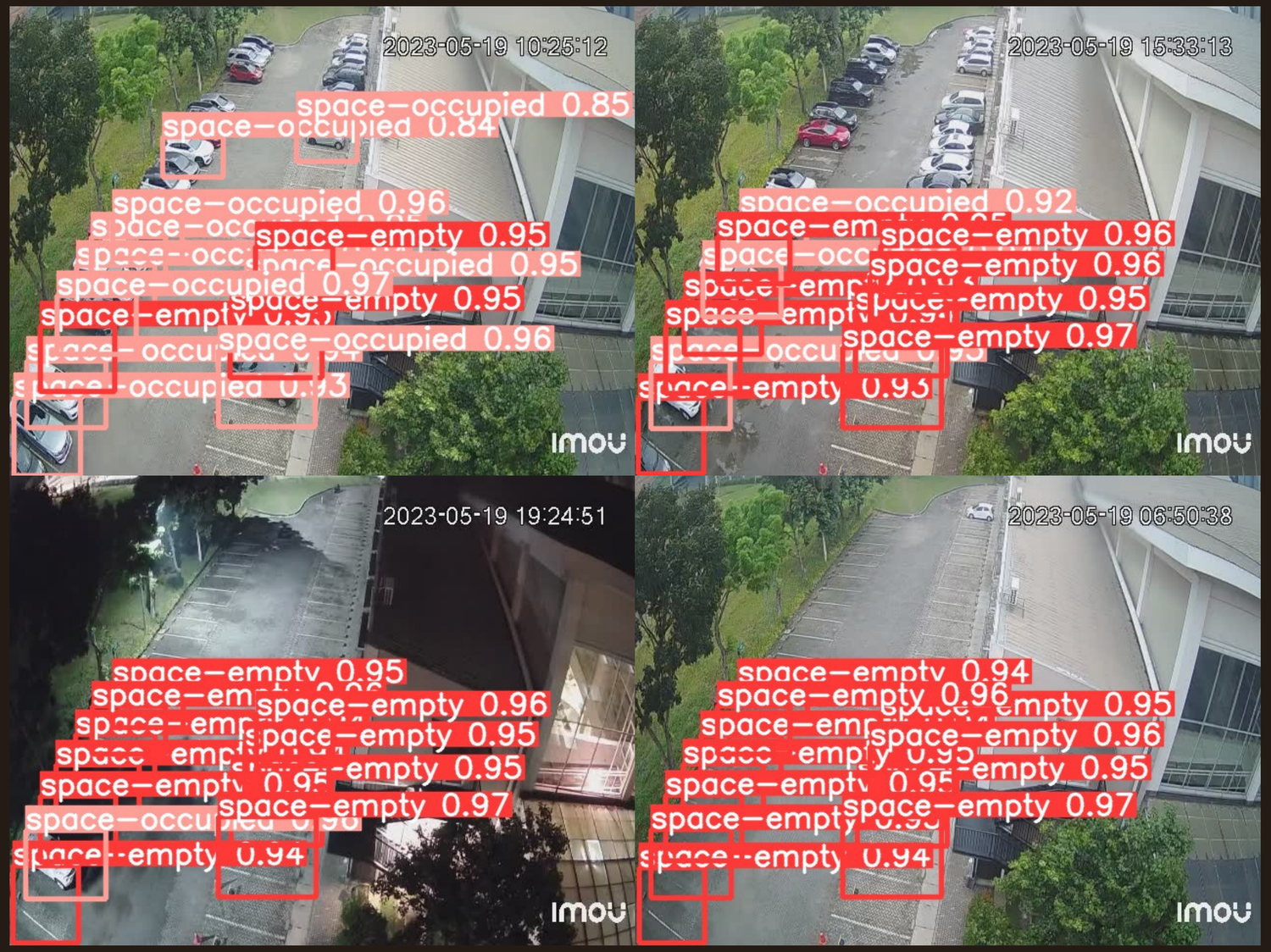

0
50
100
150
200
250
300

In [6]:

```python
import os
import glob
from PIL import Image
import shutil
import matplotlib.patches as patches
import matplotlib.pyplot as plt

# (left, top, right, bottom)
def update_labels(image_path, label_path, output_image_path, output_label_path, crop_rectangle=(0, 180, 350, 480)):
    # Open the image file
    with Image.open(image_path) as img:
        # Calculate the dimensions to crop
        left, top, right, bottom = crop_rectangle

        # Crop the image
        img_cropped = img.crop((left, top, right, bottom))

        # Save the cropped image
        img_cropped.save(output_image_path)

        # Open the label file
        with open(label_path, 'r') as file:
            labels = file.readlines()

        new_labels = []

        for label in labels:
            class_id, x_center, y_center, bbox_width, bbox_height = map(float, label.strip().split())

            # Update the labels
            x_center_new = (x_center * img.width - left) / (right - left)
            y_center_new = (y_center * img.height - top) / (bottom - top)
            bbox_width_new = bbox_width * img.width / (right - left)
            bbox_height_new = bbox_height * img.height / (bottom - top)

            # If the bounding box center is within the cropped region
            if 0 <= x_center_new <= 1 and 0 <= y_center_new <= 1:
                new_labels.append(f"{class_id} {x_center_new} {y_center_new} {bbox_width_new} {bbox_height_new}\n")

        # Save the updated labels
        with open(output_label_path, 'w') as file:
            file.writelines(new_labels)


def show_image_with_labels(image_path, label_path):
    # Open the image file
    img = Image.open(image_path)
    fig, ax = plt.subplots(1)
    ax.imshow(img)

    # Open the label file
```

RESULT

- Both class supported
- Very high confidence
- Very high MAP
- Reliable on night
- Reliable on various conditions

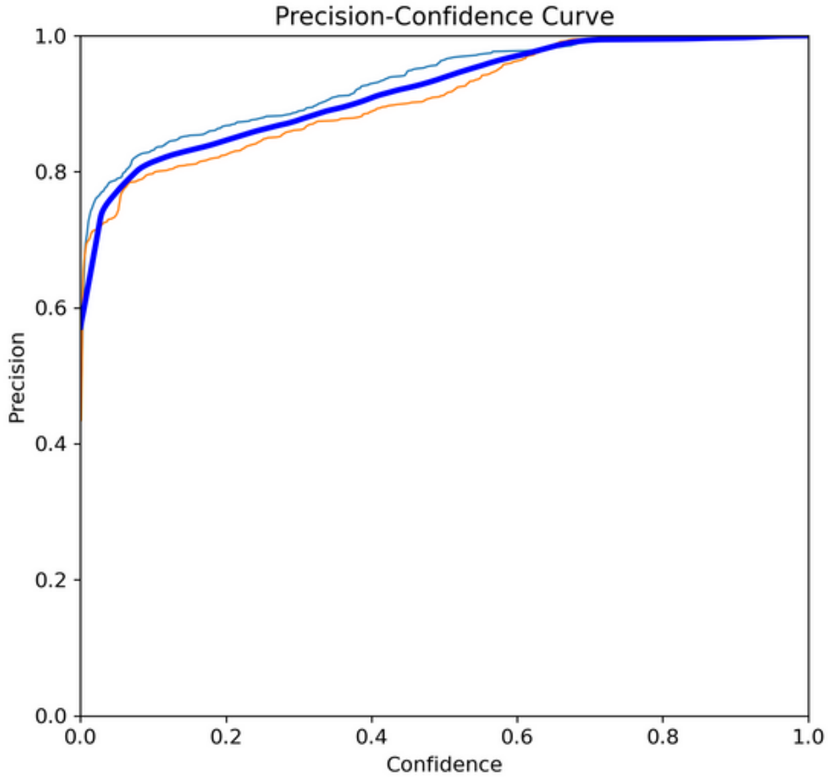


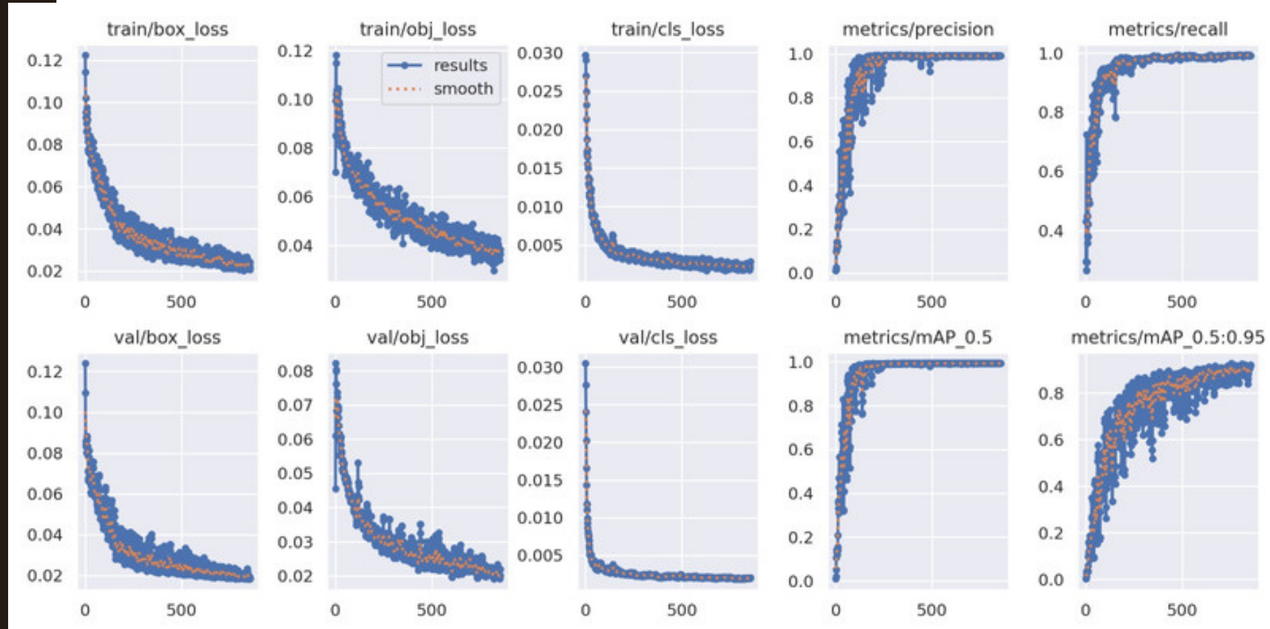
```
     Epoch    GPU_mem   box_loss   obj_loss   cls_loss  Instances       Size
   888/999     0.606G    0.02623    0.04886   0.002234         37        640: 1
                Class     Images  Instances          P          R      mAP50
                  all         60       1680      0.995      0.995      0.995      0.975
```

```
Stopping training early as no improvement observed in last 100 epochs. Best results observed at epoch 888, best
model saved as best.pt.
To update EarlyStopping(patience=100) pass a new patience value, i.e. `python train.py --patience 300` or use `-
-patience 0` to disable EarlyStopping.

989 epochs completed in 2.395 hours.
Optimizer stripped from runs/train/general_parking/general_parking/weights/last.pt, 14.4MB
Optimizer stripped from runs/train/general_parking/general_parking/weights/best.pt, 14.4MB

Validating runs/train/general_parking/general_parking/weights/best.pt...
Fusing layers...
YOLOv5s summary: 157 layers, 7015519 parameters, 0 gradients, 15.8 GFLOPs
                 Class     Images  Instances          P          R      mAP50
                   all         60       1680      0.995      0.995      0.995      0.974
           space-empty         60        886      0.994      0.995      0.995      0.985
        space-occupied         60        794      0.996      0.995      0.995      0.964
```

RESULT

- Presisi sangat tinggi, terutama saat confidence diatas 0.7
- Semua metrik tergolong bagus





SERVER INSTITUSI


```
(base) agung@monster-2:~$ sudo docker ps -a
[sudo] password for agung:
CONTAINER ID   IMAGE                          COMMAND                  CREATED         STATUS
               PORTS                                                                  NAMES
e507e487f6fd   prasmul_today_server_camera    "go run main.go"         5 weeks ago     Up 4 weeks
```

Project Details

- 15 files
- 1251 lines of code
- 2 dependencies

Features

- Bisa mengambil gambar dari kamera Imou dan mengirimkan gambar tersebut kepada backend
- Bisa menjalankan lebih dari 1 kamera
- Dapat dijalankan secara onsite maupun cloud

SERVER BACKEND

Project Details (API)

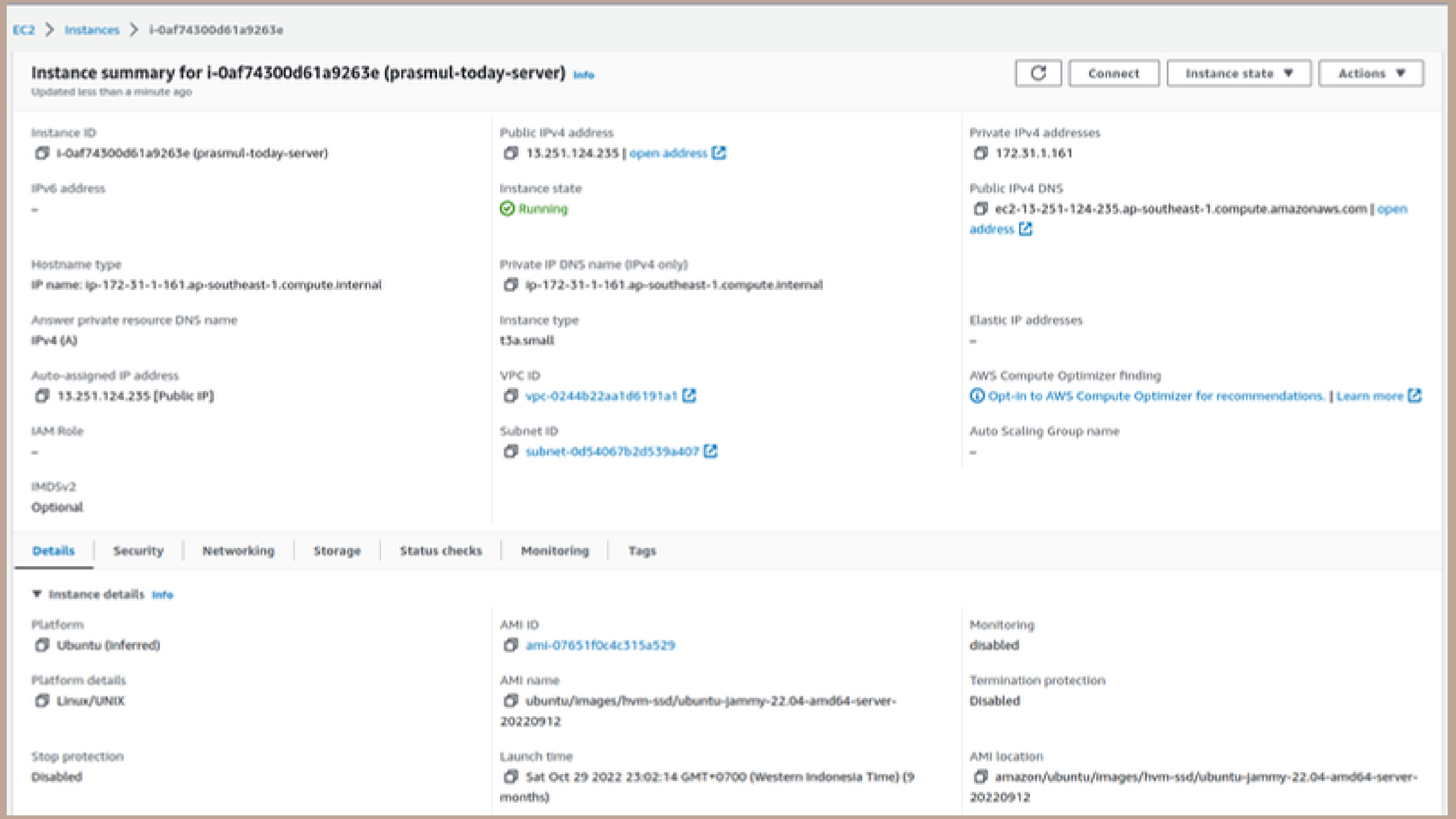
- 28 files
- 2252 lines of code
- 5 dependencies
- 7 endpoints

Project Details (Inference)

- 1 file
- 66 lines of code
- 2 dependencies
- 1 endpoint

Features

- Dapat menerima gambar, melakukan prediksi, transformasi prediksi, dan menyimpannya di cloud firestore
- Dapat menerima input JSON, untuk menyetel parameter transformasi prediksi
- Dapat menyimpan dan menggunakan lebih dari 1 model machine learning
- Dapat menerima konfigurasi lebih dari 1 kemara/lokasi/institusi, dimana masing-masing memiliki group khusus yang dapat di sesuaikan
- Mempunyai sistem registrasi menggunakan sistem token untuk keamanan client


EC2 > Instances > i-0af74300d61a9263e
Instance summary for i-0af74300d61a9263e (prasmul-today-server) Info
Updated less than a minute ago
Connect
Instance state
Actions
Instance ID
i-0af74300d61a9263e (prasmul-today-server)
IPv6 address
–
Hostname type
IP name: ip-172-31-1-161.ap-southeast-1.compute.internal
Answer private resource DNS name
IPv4 (A)
Auto-assigned IP address
13.251.124.235 [Public IP]
IAM Role
–
IMDSv2
Optional
Public IPv4 address
13.251.124.235 | open address
Instance state
Running
Private IP DNS name (IPv4 only)
ip-172-31-1-161.ap-southeast-1.compute.internal
Instance type
t3a.small
VPC ID
vpc-0244b22aa1d6191a1
Subnet ID
subnet-0d54067b2d539a407
Private IPv4 addresses
172.31.1.161
Public IPv4 DNS
ec2-13-251-124-235.ap-southeast-1.compute.amazonaws.com | open address
Elastic IP addresses
–
AWS Compute Optimizer finding
Opt-in to AWS Compute Optimizer for recommendations. | Learn more
Auto Scaling Group name
–
Details
Security
Networking
Storage
Status checks
Monitoring
Tags
Instance details Info
Platform
Ubuntu (inferred)
Platform details
Linux/UNIX
Stop protection
Disabled
AMI ID
ami-07651f0c4c315a529
AMI name
ubuntu/images/hvm-ssd/ubuntu-jammy-22.04-amd64-server-20220912
Launch time
Sat Oct 29 2022 23:02:14 GMT+0700 (Western Indonesia Time) (9 months)
Monitoring
disabled
Termination protection
Disabled
AMI location
amazon/ubuntu/images/hvm-ssd/ubuntu-jammy-22.04-amd64-server-20220912

APLIKASI

Project Details

- 56 files
- 4230 lines of code
- 12 dependencies

Features

- Bisa mengambil data pada cloud firestore secara real-time (Langsung update setiap kali ada perubahan pada database, bukan menarik setiap menit)
- Pengguna dapat melihat lebih dari 1 kemara/lokasi/institusi
- Pengguna dapat melakukan registrasi, login, dan lupa password. Semua menggunakan firebase authentication untuk menjamin keamanan data yang tersimpan
- Pengguna dapat menghapus akun beserta semua datanya

play.google.com/store/apps/details?id=com.nss_productions.parkyr

Google Play Games Apps Movies Books Children

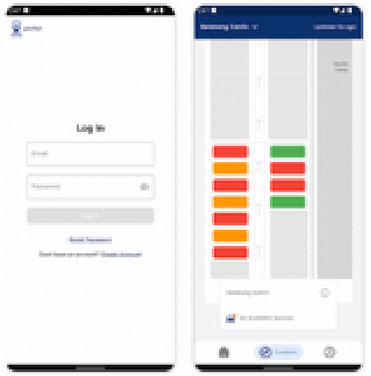
Parkyr

nss_productions

1+ Downloads | 3+ Rated for 3+

Install | Add to wishlist

You don't have any devices

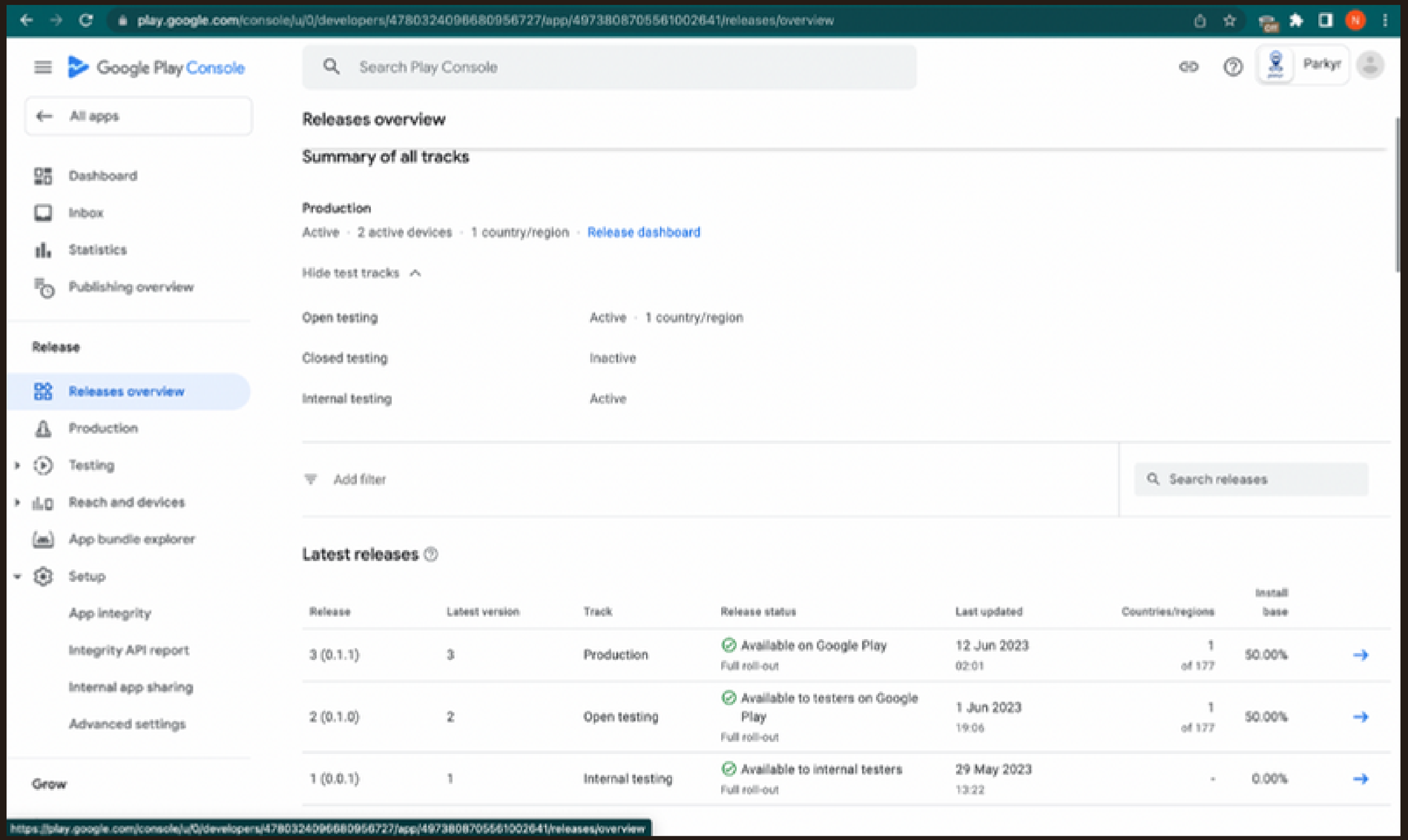


Developer contact

Email
support@nss-productions.com

Privacy policy
https://www.termsfeed.com/live/13ba1ec1-3508-4e8b-993a-aa6163eee4f6

About this app →


play.google.com/console/u/0/developers/4780324096680956727/app/4973808705561002641/releases/overview
Google Play Console
Search Play Console
Parkyr
All apps
Dashboard
Inbox
Statistics
Publishing overview
Release
Releases overview
Production
Testing
Reach and devices
App bundle explorer
Setup
App integrity
Integrity API report
Internal app sharing
Advanced settings
Grow
Releases overview
Summary of all tracks
Production
Active · 2 active devices · 1 country/region · Release dashboard
Hide test tracks
Open testing
Active · 1 country/region
Closed testing
Inactive
Internal testing
Active
Add filter
Search releases
Latest releases
Release
Latest version
Track
Release status
Last updated
Countries/regions
Install base
3 (0.1.1)
3
Production
Available on Google Play
Full roll-out
12 Jun 2023
02:01
1
of 177
50.00%
2 (0.1.0)
2
Open testing
Available to testers on Google Play
Full roll-out
1 Jun 2023
19:06
1
of 177
50.00%
1 (0.0.1)
1
Internal testing
Available to internal testers
Full roll-out
29 May 2023
13:22
-
0.00%

termsfeed.com/live/13ba1ec1-3508-4e8b-993a-aa6163eee4f6

Privacy Policy for Parkyr

Privacy Policy

Last updated: May 29, 2023

This Privacy Policy describes Our policies and procedures on the collection, use and disclosure of Your information when You use the Service and tells You about Your privacy rights and how the law protects You.

We use Your Personal data to provide and improve the Service. By using the Service, You agree to the collection and use of information in accordance with this Privacy Policy. This Privacy Policy has been created with the help of the TermsFeed Privacy Policy Generator.

Interpretation and Definitions

Interpretation

The words of which the initial letter is capitalized have meanings defined under the following conditions. The following definitions shall have the same meaning regardless of whether they appear in singular or in plural.

Definitions

For the purposes of this Privacy Policy:

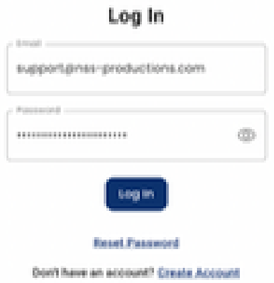
- **Account** means a unique account created for You to access our Service or parts of our Service.
- **Affiliate** means an entity that controls, is controlled by or is under common control with a party, where "control" means ownership of 50% or more of the shares, equity interest or other securities entitled to vote for election of directors or other managing authority.

How to Delete Your Parkyr Account

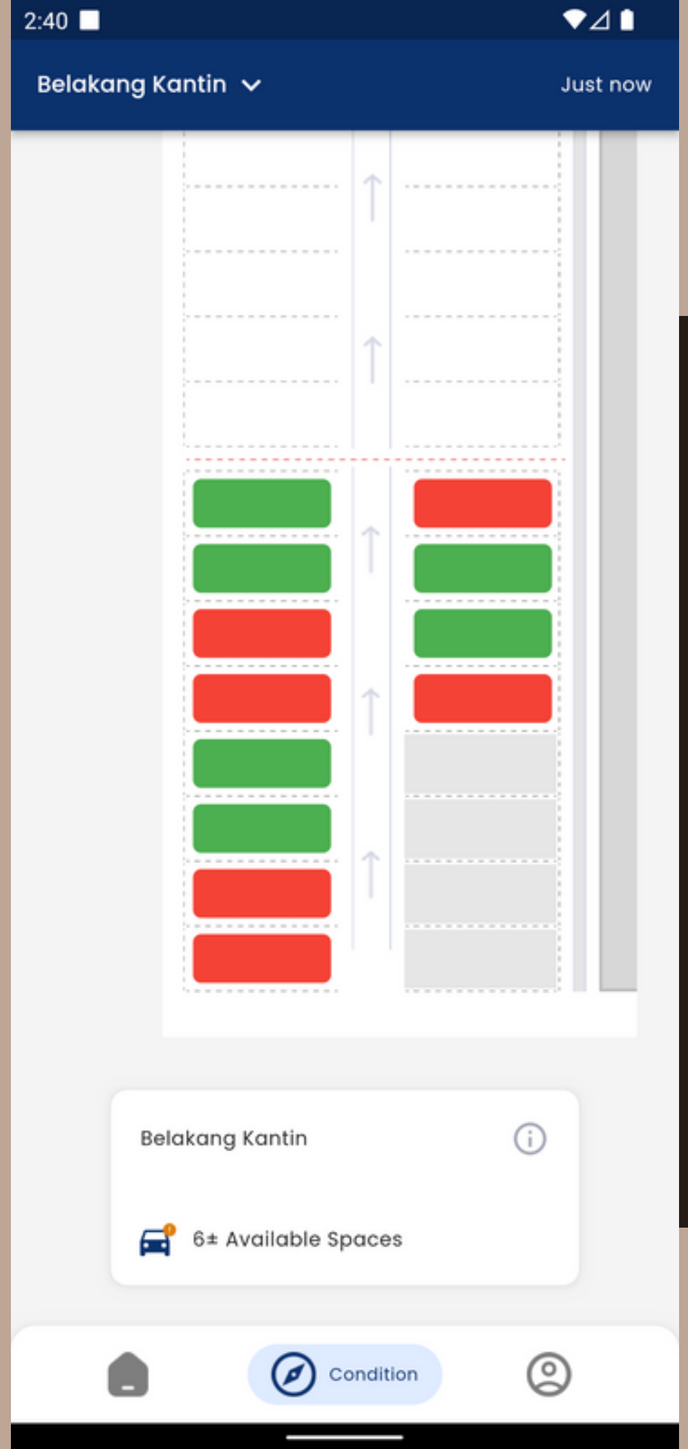
If you wish to delete your account and all associated data from Parkyr, please follow the steps detailed below:

Step 1: Log In

Open the Parkyr app on your device and log into your account.



KESIMPULAN & SARAN



KESIMPULAN

- Penelitian mengembangkan sistem pemantauan parkir di Universitas Prasetiya Mulya dengan menggunakan Kamera IP Imou dan model machine learning berbasis YOLOv5 yang memiliki presisi tinggi.
- Sistem backend diterapkan di Amazon AWS EC2 dengan alamat "nss-productions.com", menggunakan Docker Compose untuk proses deployment.
- Aplikasi mobile "Parkyr", yang dibangun dengan Flutter, telah dirilis di Google Playstore untuk pengguna Indonesia, memenuhi semua persyaratan platform tersebut.

SARAN

01

Perluasan jangkauan pengawasan dengan menambahkan lebih banyak kamera dari berbagai posisi dan kondisi diperlukan. Penggunaan kamera fisheye yang memiliki sudut pandang yang lebih luas juga dapat dipertimbangkan.

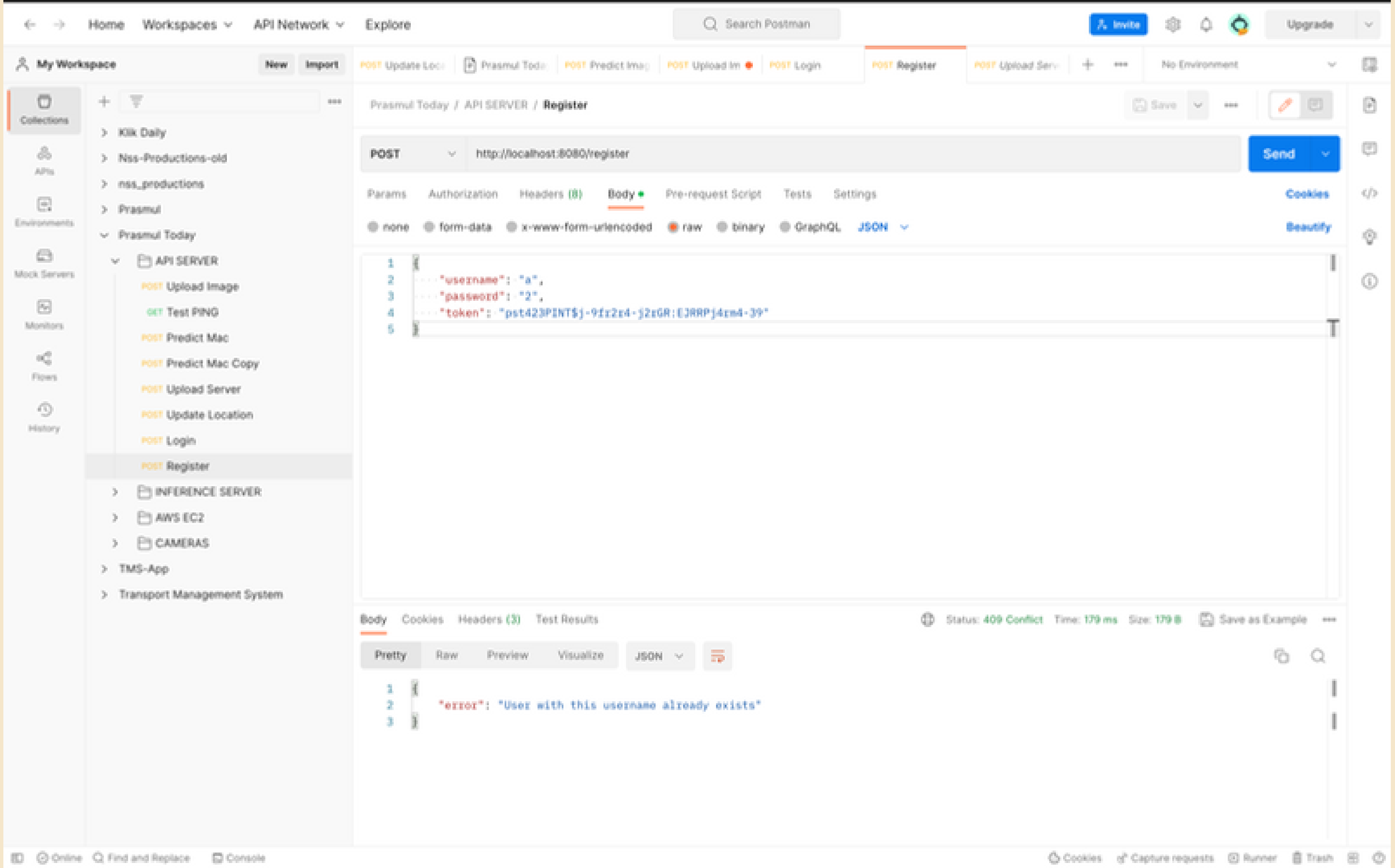
02

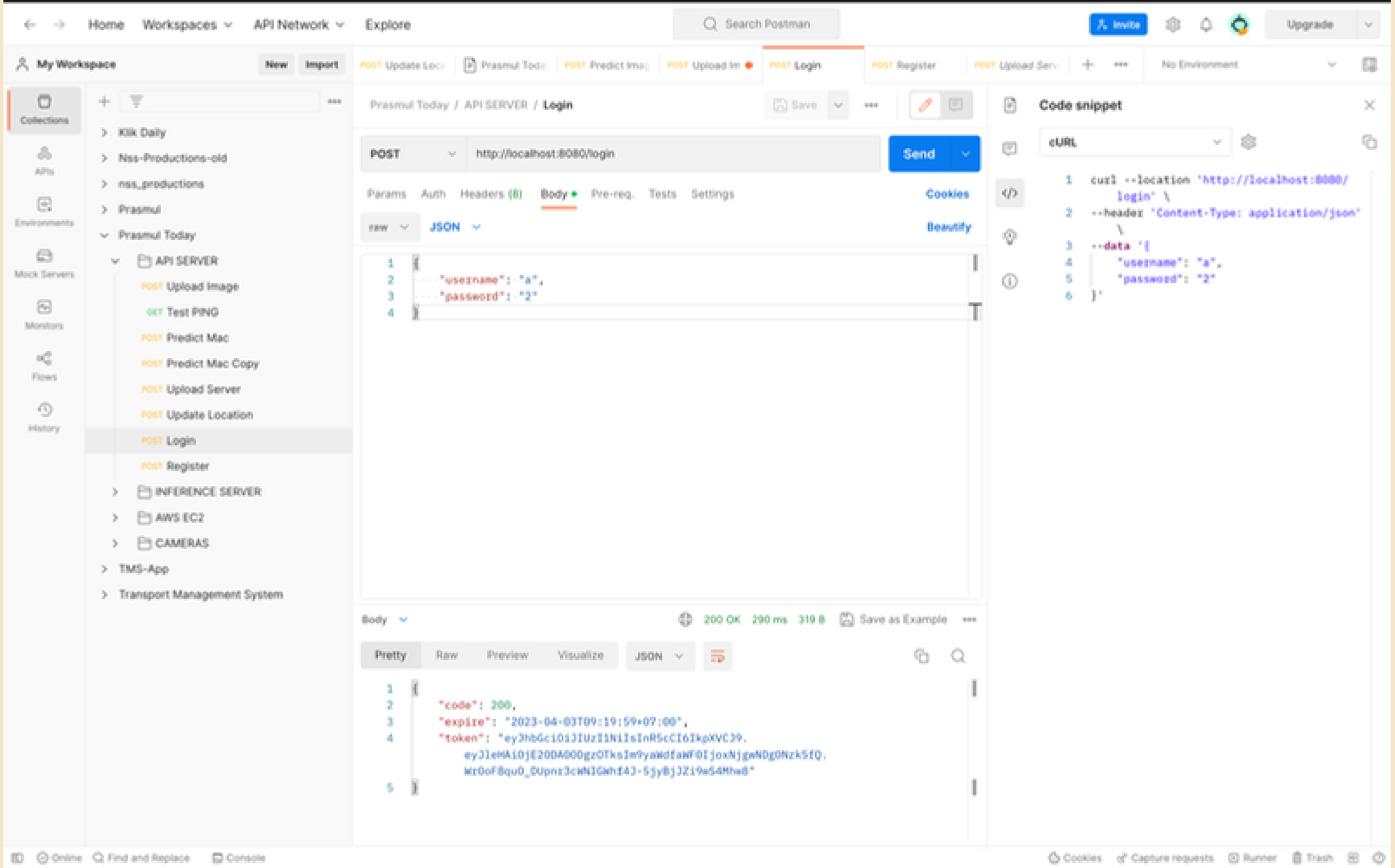
Penelitian saat ini menggunakan format JSON yang kurang efisien untuk penyimpanan data skala besar. Maka, penggunaan format JSON yang lebih efisien dalam proses manipulasi data diperlukan.

03

Pengembangan aplikasi bisa dilakukan untuk tidak hanya memantau tempat parkir, tetapi juga melihat tingkat kepadatan gedung. Aplikasi tersebut juga bisa ditambahkan fitur untuk menyimpan berita atau informasi terkait setiap lokasi.

LAMPIRAN


Home
Workspaces
API Network
Explore
Search Postman
Invite
Upgrade
My Workspace
New
Import
Collections
APIs
Environments
Mock Servers
Monitors
Flows
History
Klik Daily
Nss-Productions-old
nss_productions
Prasmul
Prasmul Today
API SERVER
Upload Image
Test PING
Predict Mac
Predict Mac Copy
Upload Server
Update Location
Login
Register
INFERENCE SERVER
AWS EC2
CAMERAS
TMS-App
Transport Management System
No Environment
Prasmul Today / API SERVER / Register
Save
POST
http://localhost:8080/register
Send
Params
Authorization
Headers (8)
Body
Pre-request Script
Tests
Settings
Cookies
none
form-data
x-www-form-urlencoded
raw
binary
GraphQL
JSON
Beautify
{
"useiname": "a",
"password": "2",
"token": "pst423PINT$j-9fz2z4-j2zGR:EJRRPj4zm4-39"
}
Body
Cookies
Headers (3)
Test Results
Status: 409 Conflict
Time: 179 ms
Size: 179 B
Save as Example
Pretty
Raw
Preview
Visualize
JSON
{
"error": "User with this username already exists"
}
Online
Find and Replace
Console
Cookies
Capture requests
Runner
Trash


Home
Workspaces
API Network
Explore
Search Postman
Invite
Upgrade
My Workspace
New
Import
Collections
APIs
Environments
Mock Servers
Monitors
Flows
History
Klik Daily
Nss-Productions-old
nss_productions
Prasmul
Prasmul Today
API SERVER
Upload Image
Test PING
Predict Mac
Predict Mac Copy
Upload Server
Update Location
Login
Register
INFERENCE SERVER
AWS EC2
CAMERAS
TMS-App
Transport Management System
Prasmul Today / API SERVER / Login
Save
POST
http://localhost:8080/login
Send
Params
Auth
Headers (8)
Body
Pre-req.
Tests
Settings
Cookies
raw
JSON
Beautify
{
"username": "a",
"password": "2"
}
Body
200 OK
290 ms
319 B
Save as Example
Pretty
Raw
Preview
Visualize
JSON
{
"code": 200,
"expire": "2023-04-03T09:19:59+07:00",
"token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.
eyJleHAiOjE2ODA0OQgzOTksImYyaWdfaWFOIjoxNjgwNDg0Nzk5fQ.
WzOoF8qu0_DUpnz3cWNIGWhf4J-5jyBjJZi9wS4Mhw8"
}
Code snippet
cURL
curl --location 'http://localhost:8080/
login' \
--header 'Content-Type: application/json'
\
--data '{
"username": "a",
"password": "2"
}'
Online
Find and Replace
Console
Cookies
Capture requests
Runner
Trash

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My Workspace New Import

Collections APIs Environments Mock Servers Monitors Flows History

- Klik Daily
- Nss-Productions-old
- nss_productions
- Prasmul
- Prasmul Today
  - API SERVER
    - POST Upload Image
    - GET Test PING
    - POST Predict Mac
    - POST Predict Mac Copy
    - POST Upload Server
    - POST Update Location
    - POST Login
    - POST Register
  - INFERENCE SERVER
  - AWS EC2
  - CAMERAS
- TMS-App
- Transport Management System

POST Update Loc | Prasmul Tod | POST Predict Ima | POST Upload Im | POST Login | POST Register | POST Upload Serv | No Environment

Prasmul Today / API SERVER / **Upload Image** Save

POST http://localhost:8080/save-image Send

Params Authorization Headers (10) Body Pre-request Script Tests Settings Cookies

Type Bearer Token

The authorization header will be automatically generated when you send the request. Learn more about authorization ↗

Heads up! These parameters hold sensitive data. To keep this data secure while working in a collaborative environment, we recommend using variables. Learn more about variables ↗

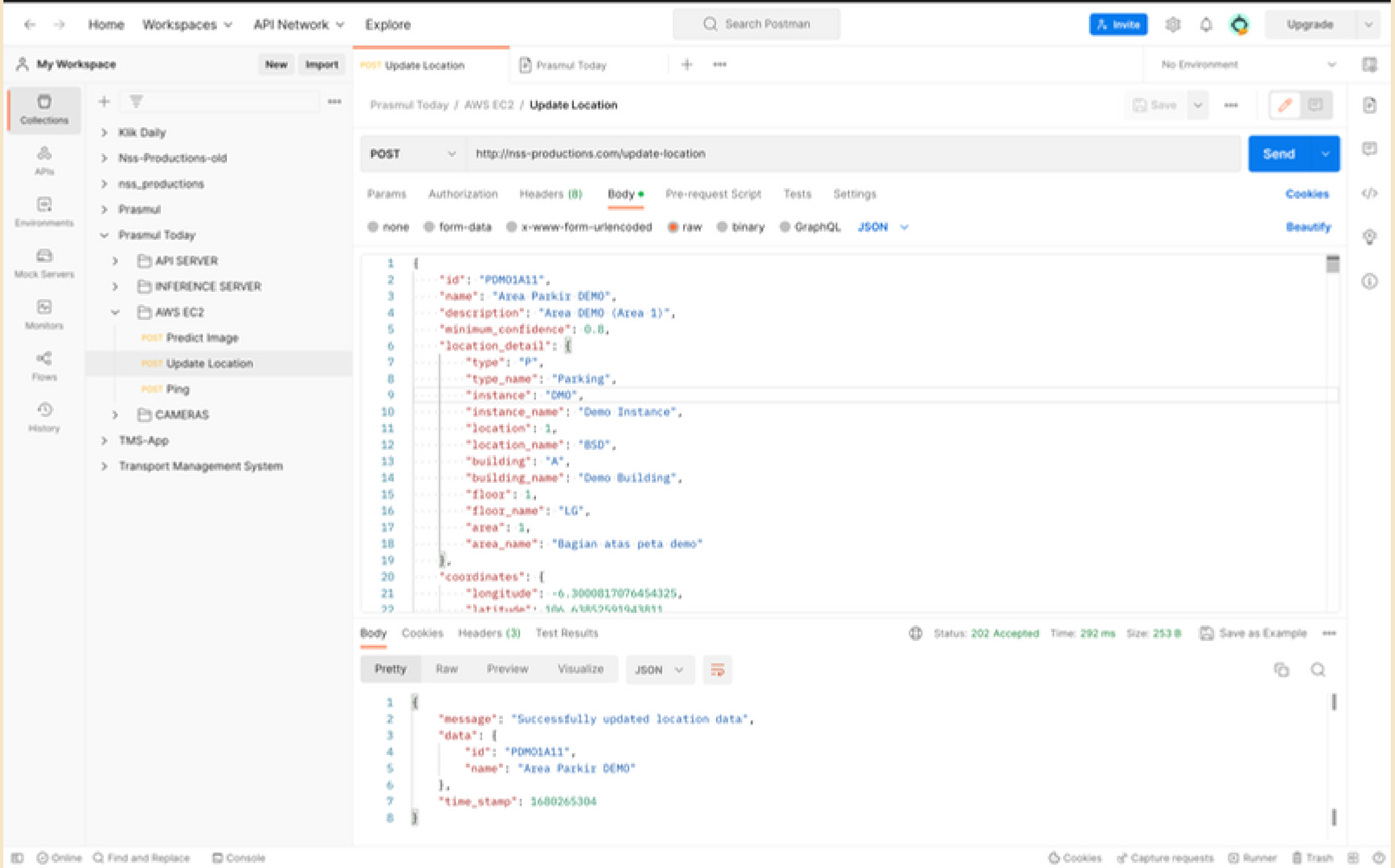
Token

eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJle
HAiOjE2ODA0ODE3OTMsIm9yaWdfaWF0IjoxN
jgwNDc4MTkzfQ.83kaebqJ4z0aUXZ_xR1tvcQmJD83IZWeY9EVjy8FozA

Response

Click Send to get a response

Online Find and Replace Console Cookies Capture requests Runner Trash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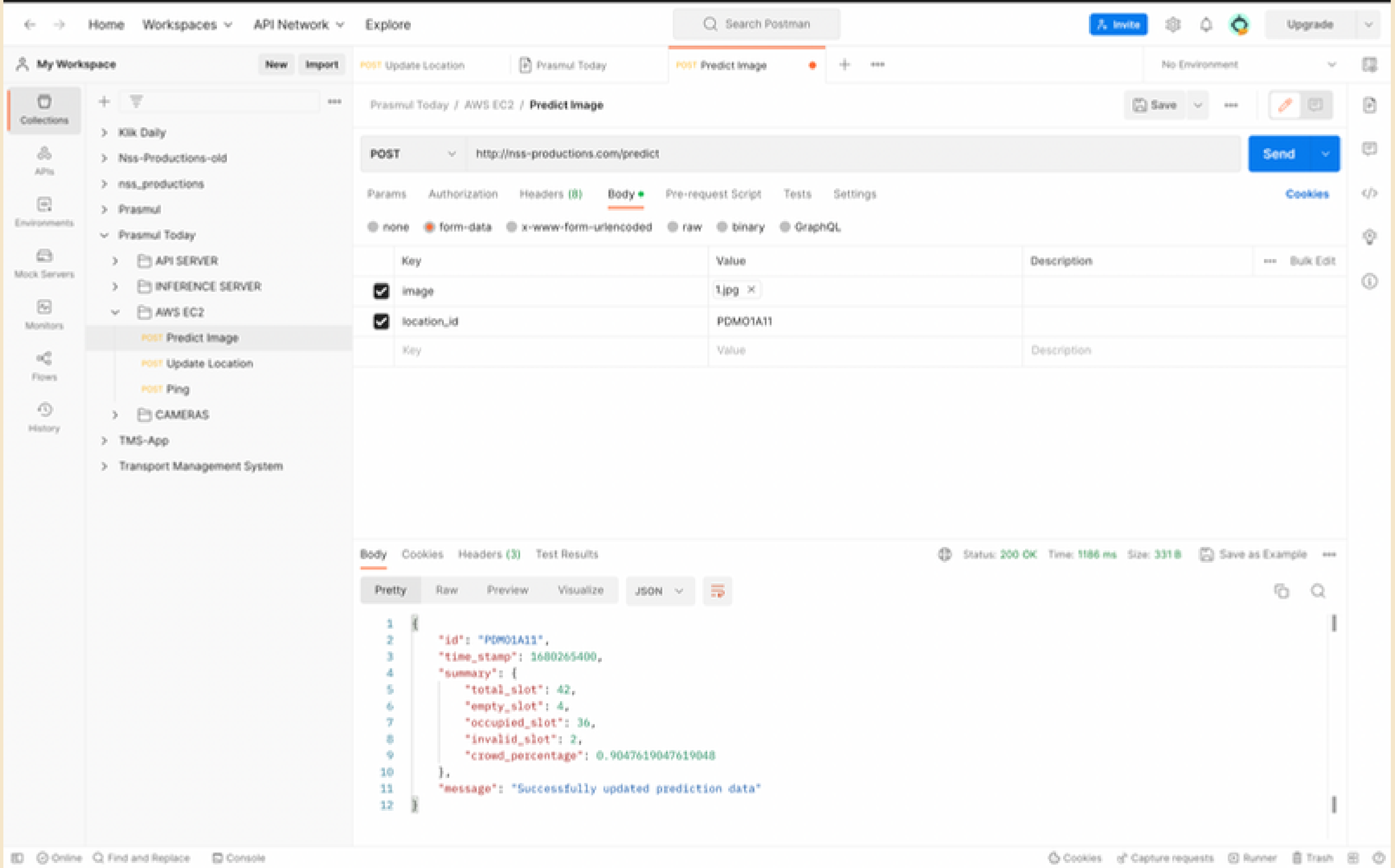
TMS-App
Transport Management System
POST Update Location
Prasmul Today
No Environment
Prasmul Today / AWS EC2 / Update Location
Save
POST
http://nss-productions.com/update-location
Send
Params
Authorization
Headers (8)
Body
Pre-request Script
Tests
Settings
Cookies
none
form-data
x-www-form-urlencoded
raw
binary
GraphQL
JSON
Beautify
{
"id": "PDMO1A11",
"name": "Area Parkir DEMO",
"description": "Area DEMO (Area 1)",
"minimum_confidence": 0.8,
"location_detail": {
"type": "P",
"type_name": "Parking",
"instance": "DMO",
"instance_name": "Demo Instance",
"location": 1,
"location_name": "BSD",
"building": "A",
"building_name": "Demo Building",
"floor": 1,
"floor_name": "LG",
"area": 1,
"area_name": "Bagian atas peta demo"
},
"coordinates": {
"longitude": -6.300081707645432
5,
Body
Cookies
Headers (3)
Test Results
Status: 202 Accepted
Time: 292 ms
Size: 253 B
Save as Example
Pretty
Raw
Preview
Visualize
JSON
{
"message": "Successfully updated location data",
"data": {
"id": "PDMO1A11",
"name": "Area Parkir DEMO"
},
"time_stamp": 1680265304
}
Online
Find and Replace
Console
Cookies
Capture requests
Runner
Trash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Workspaces
API Network
Explore
Search Postman
Invite
Upgrade
My Workspace
New
Import
POST Update Location
Prasmul Today
POST Predict Image
No Environment
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POST Predict Image
POST Update Location
POST Ping
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Prasmul Today / AWS EC2 / Predict Image
Save
POST
http://nss-productions.com/predict
Send
Params
Authorization
Headers (8)
Body
Pre-request Script
Tests
Settings
Cookies
none
form-data
x-www-form-urlencoded
raw
binary
GraphQL
Key
Value
Description
Bulk Edit
image
1.jpg
location_id
PDMO1A11
Key
Value
Description
Body
Cookies
Headers (3)
Test Results
Status: 200 OK
Time: 1186 ms
Size: 331 B
Save as Example
Pretty
Raw
Preview
Visualize
JSON
{
"id": "PDMO1A11",
"time_stamp": 1680265400,
"summary": {
"total_slot": 42,
"empty_slot": 4,
"occupied_slot": 36,
"invalid_slot": 2,
"crowd_percentage": 0.9047619047619048
},
"message": "Successfully updated prediction data"
}
Online
Find and Replace
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Cookies
Capture requests
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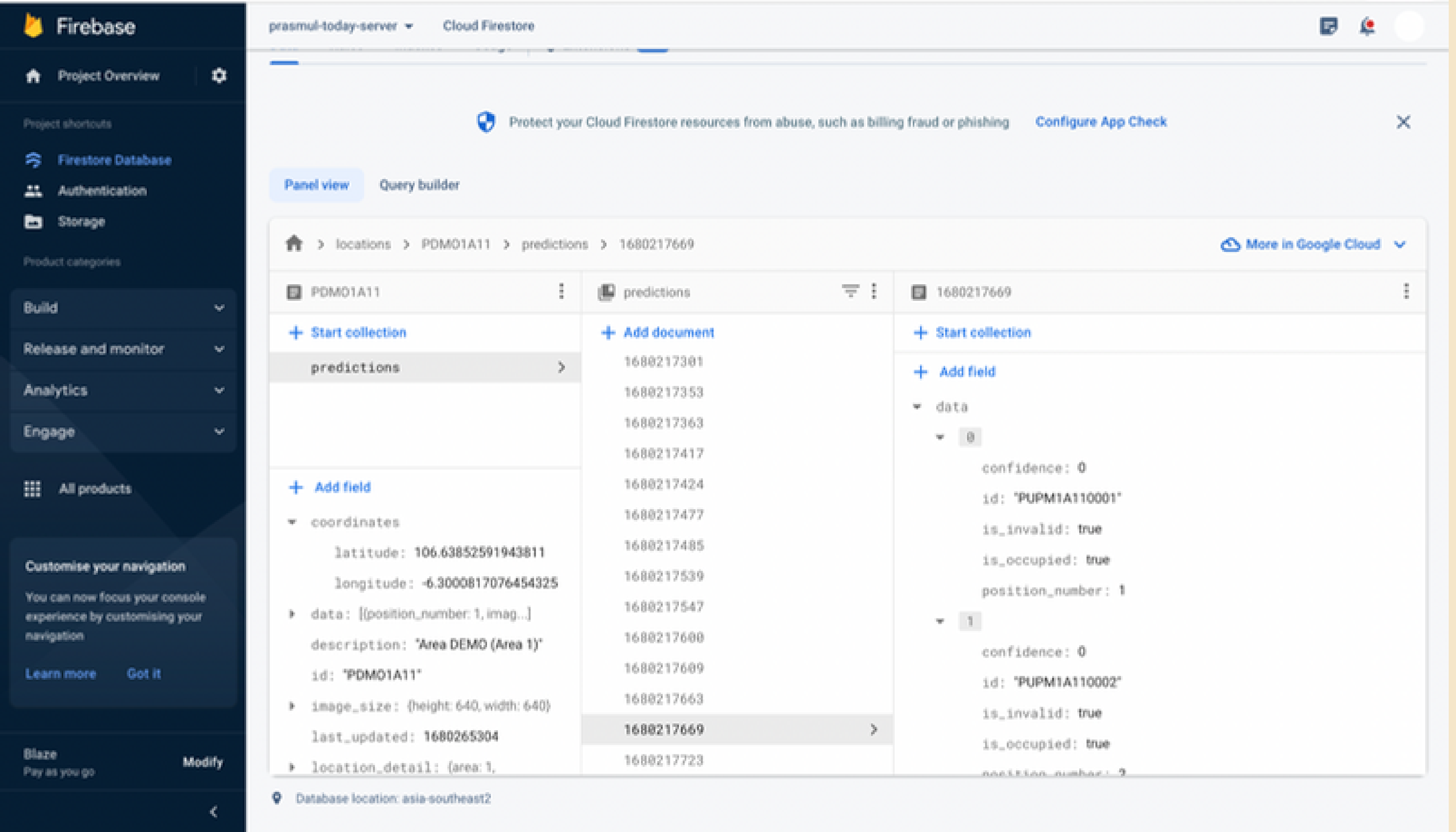
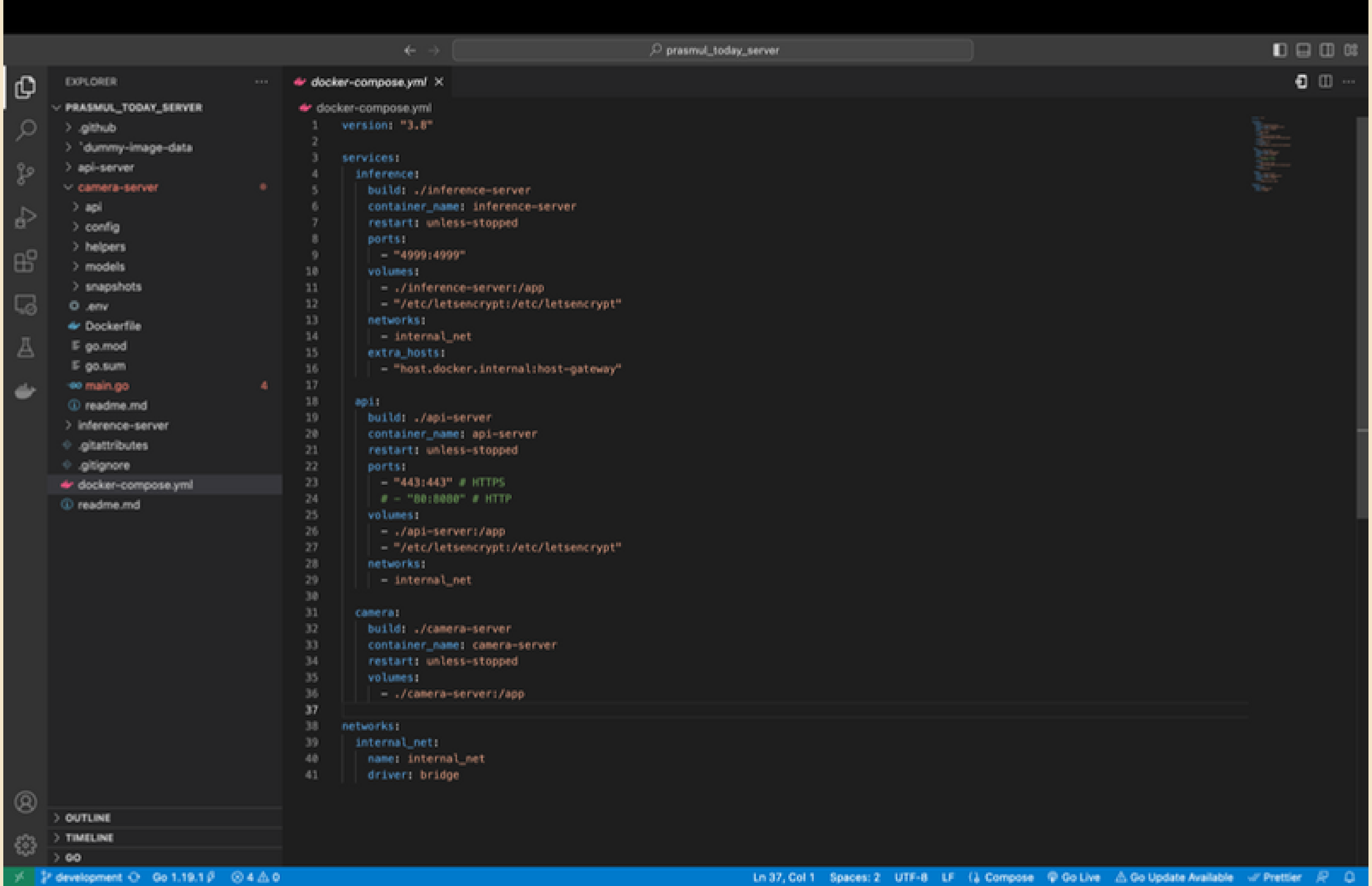
Trash


Firebase
prasmul-today-server
Cloud Firestore
Project Overview
Project shortcuts
Firestore Database
Authentication
Storage
Product categories
Build
Release and monitor
Analytics
Engage
All products
Customise your navigation
You can now focus your console experience by customising your navigation
Learn more
Got it
Blaze
Pay as you go
Modify
Protect your Cloud Firestore resources from abuse, such as billing fraud or phishing
Configure App Check
Panel view
Query builder
locations > PDM01A11 > predictions > 1680217669
More in Google Cloud
PDM01A11
predictions
1680217669
Start collection
predictions
Add document
1680217301
1680217353
1680217363
1680217417
1680217424
1680217477
1680217485
1680217539
1680217547
1680217600
1680217609
1680217663
1680217669
1680217723
Start collection
Add field
Add field
coordinates
latitude: 106.63852591943811
longitude: -6.3000817076454325
data: [{position_number: 1, imag...]
description: "Area DEMO (Area 1)"
id: "PDM01A11"
image_size: {height: 640, width: 640}
last_updated: 1680265304
location_detail: {area: 1,
data
0
confidence: 0
id: "PUPM1A110001"
is_invalid: true
is_occupied: true
position_number: 1
1
confidence: 0
id: "PUPM1A110002"
is_invalid: true
is_occupied: true
Database location: asia-southeast2


prasmul_today_server
EXPLORER
PRASMUL_TODAY_SERVER
.github
dummy-image-data
api-server
camera-server
api
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helpers
models
snapshots
.env
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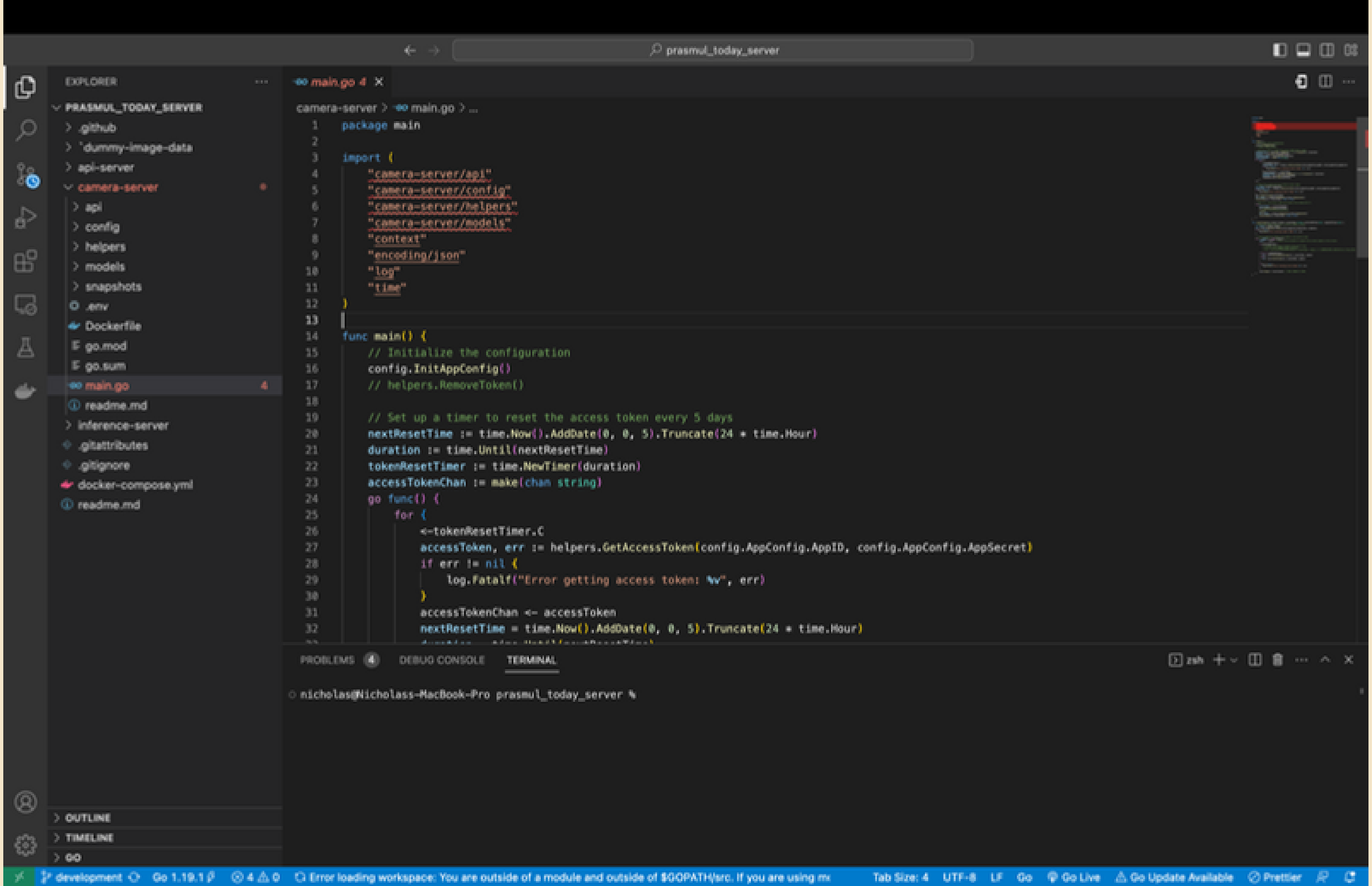
main.go
readme.md
inference-server
.gitattributes
.gitignore
docker-compose.yml
readme.md
OUTLINE
TIMELINE
GO
docker-compose.yml
docker-compose.yml
version: "3.8"
services:
inference:
build: ./inference-server
container_name: inference-server
restart: unless-stopped
ports:
- "4999:4999"
volumes:
- ./inference-server:/app
- "/etc/letsencrypt:/etc/letsencrypt"
networks:
- internal_net
extra_hosts:
- "host.docker.internal:host-gateway"
api:
build: ./api-server
container_name: api-server
restart: unless-stopped
ports:
- "443:443" # HTTPS
- "80:8080" # HTTP
volumes:
- ./api-server:/app
- "/etc/letsencrypt:/etc/letsencrypt"
networks:
- internal_net
camera:
build: ./camera-server
container_name: camera-server
restart: unless-stopped
volumes:
- ./camera-server:/app
networks:
internal_net:
name: internal_net
driver: bridge
development
Go 1.19.1
Ln 37, Col 1
Spaces: 2
UTF-8
LF
Compose
Go Live
Go Update Available
Prettier


prasmul_today_server
EXPLORER
PRASMUL_TODAY_SERVER
.github
dummy-image-data
api-server
camera-server
api
config
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models
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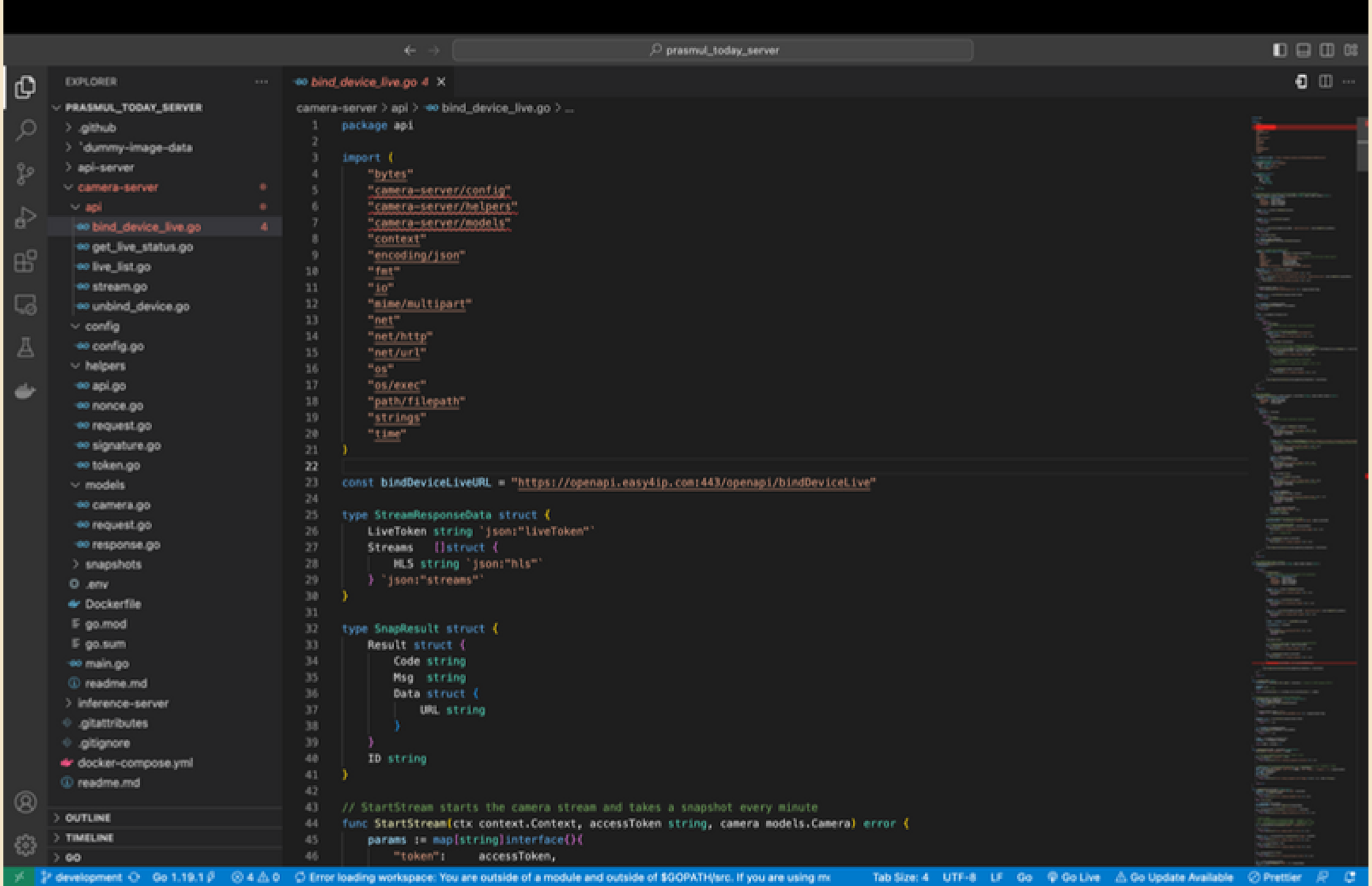
docker-compose.yml
readme.md
OUTLINE
TIMELINE
GO
main.go 4
camera-server > main.go > ...
package main
import (
"camera-server/api"
"camera-server/config"
"camera-server/helpers"
"camera-server/models"
"context"
"encoding/json"
"log"
"time"
)
func main() {
// Initialize the configuration
config.InitAppConfig()
// helpers.RemoveToken()
// Set up a timer to reset the access token every 5 days
nextResetTime := time.Now().AddDate(0, 0, 5).Truncate(24 * time.Hour)
duration := time.Until(nextResetTime)
tokenResetTimer := time.NewTimer(duration)
accessTokenChan := make(chan string)
go func() {
for {
<-tokenResetTimer.C
accessToken, err := helpers.GetAccessToken(config.AppConfig.AppID, config.AppConfig.AppSecret)
if err != nil {
log.Fatalf("Error getting access token: %v", err)
}
accessTokenChan <- accessToken
nextResetTime = time.Now().AddDate(0, 0, 5).Truncate(24 * time.Hour)
PROBLEMS 4
DEBUG CONSOLE
TERMINAL
zsh
nicholas@Nicholass-MacBook-Pro prasmul_today_server %
development
Go 1.19.1
4 0
Error loading workspace: You are outside of a module and outside of $GOPATH/src. If you are using m
Tab Size: 4
UTF-8
LF
Go
Go Live
Go Update Available
Prettier


prasmul_today_server
EXPLORER
PRASMUL_TODAY_SERVER
.github
dummy-image-data
api-server
camera-server
api
bind_device_live.go 4
get_live_status.go
live_list.go
stream.go
unbind_device.go
config
config.go
helpers
api.go
nonce.go
request.go
signature.go
token.go
models
camera.go
request.go
response.go
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Dockerfile
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readme.md
inference-server
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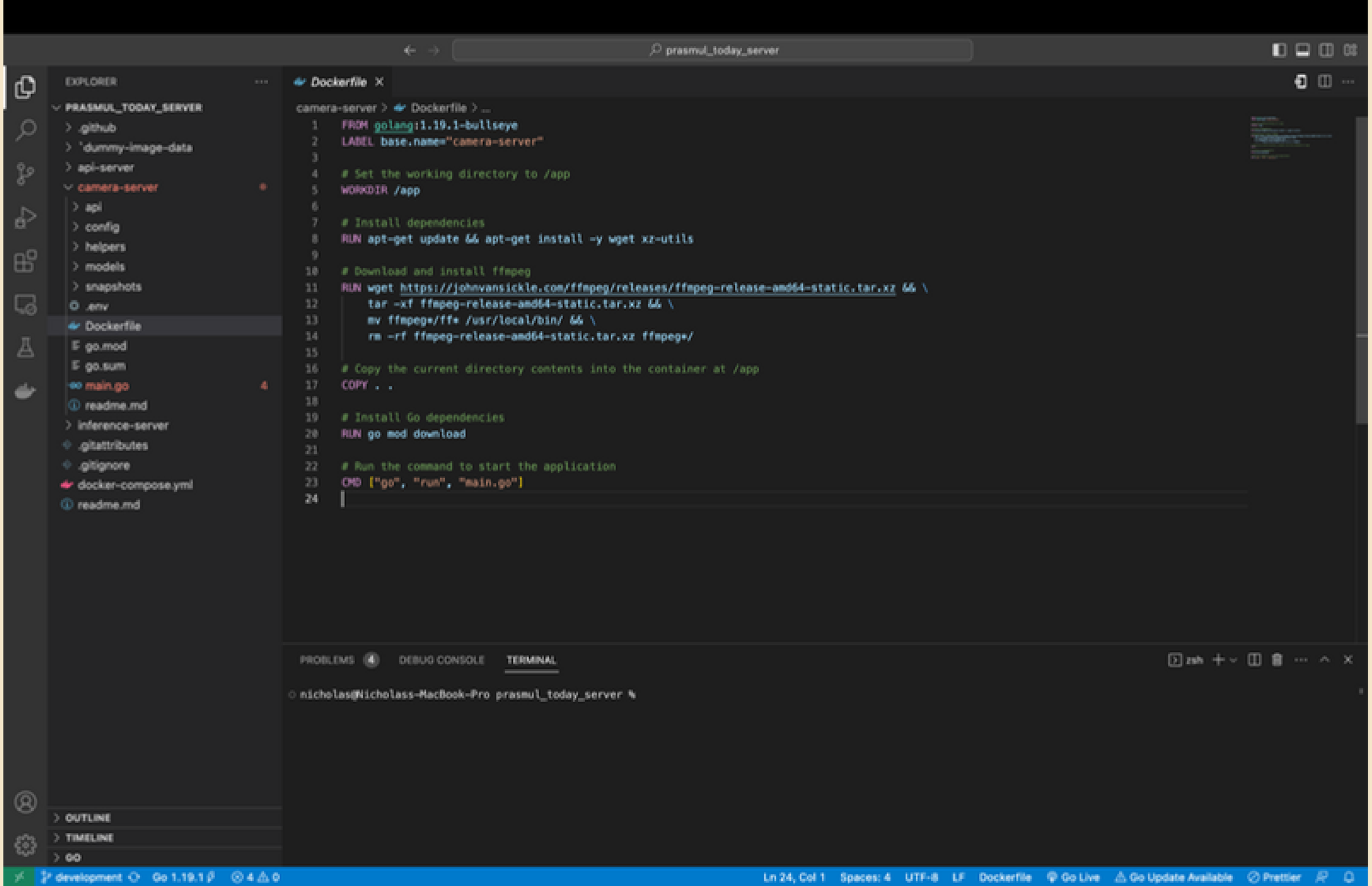
.gitignore
docker-compose.yml
readme.md
OUTLINE
TIMELINE
GO
bind_device_live.go 4
camera-server > api > bind_device_live.go > ...
package api
import (
"bytes"
"camera-server/config"
"camera-server/helpers"
"camera-server/models"
"context"
"encoding/json"
"fmt"
"io"
"mime/multipart"
"net"
"net/http"
"net/url"
"os"
"os/exec"
"path/filepath"
"strings"
"time"
)
const bindDeviceLiveURL = "https://openapi.easy4ip.com:443/openapi/bindDeviceLive"
type StreamResponseData struct {
LiveToken string `json:"liveToken"`
Streams []struct {
HLS string `json:"hls"`
} `json:"streams"`
}
type SnapResult struct {
Result struct {
Code string
Msg string
Data struct {
URL string
}
}
ID string
}
// StartStream starts the camera stream and takes a snapshot every minute
func StartStream(ctx context.Context, accessToken string, camera models.Camera) error {
params := map[string]interface{}{
"token": accessToken,
development
Go 1.19.1
4 0
Error loading workspace: You are outside of a module and outside of $GOPATH/src. If you are using m
Tab Size: 4
UTF-8
LF
Go
Go Live
Go Update Available
Prettier


prasmul_today_server
EXPLORER
PRASMUL_TODAY_SERVER
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dummy-image-data
api-server
camera-server
api
config
helpers
models
snapshots
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readme.md
inference-server
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.gitignore
docker-compose.yml
readme.md
OUTLINE
TIMELINE
GO
Dockerfile
camera-server > Dockerfile > ...
1 FROM golang:1.19.1-bullseye
2 LABEL base.name="camera-server"
3
4 # Set the working directory to /app
5 WORKDIR /app
6
7 # Install dependencies
8 RUN apt-get update && apt-get install -y wget xz-utils
9
10 # Download and install ffmpeg
11 RUN wget https://johnvansickle.com/ffmpeg/releases/ffmpeg-release-amd64-static.tar.xz && \
12 tar -xf ffmpeg-release-amd64-static.tar.xz && \
13 mv ffmpeg*/ff* /usr/local/bin/ && \
14 rm -rf ffmpeg-release-amd64-static.tar.xz ffmpeg*/
15
16 # Copy the current directory contents into the container at /app
17 COPY . .
18
19 # Install Go dependencies
20 RUN go mod download
21
22 # Run the command to start the application
23 CMD ["go", "run", "main.go"]
24
PROBLEMS 4
DEBUG CONSOLE
TERMINAL
zsh
nicholas@Nicholass-MacBook-Pro prasmul_today_server %
development
Go 1.19.1
4 0
Ln 24, Col 1
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LF
Dockerfile
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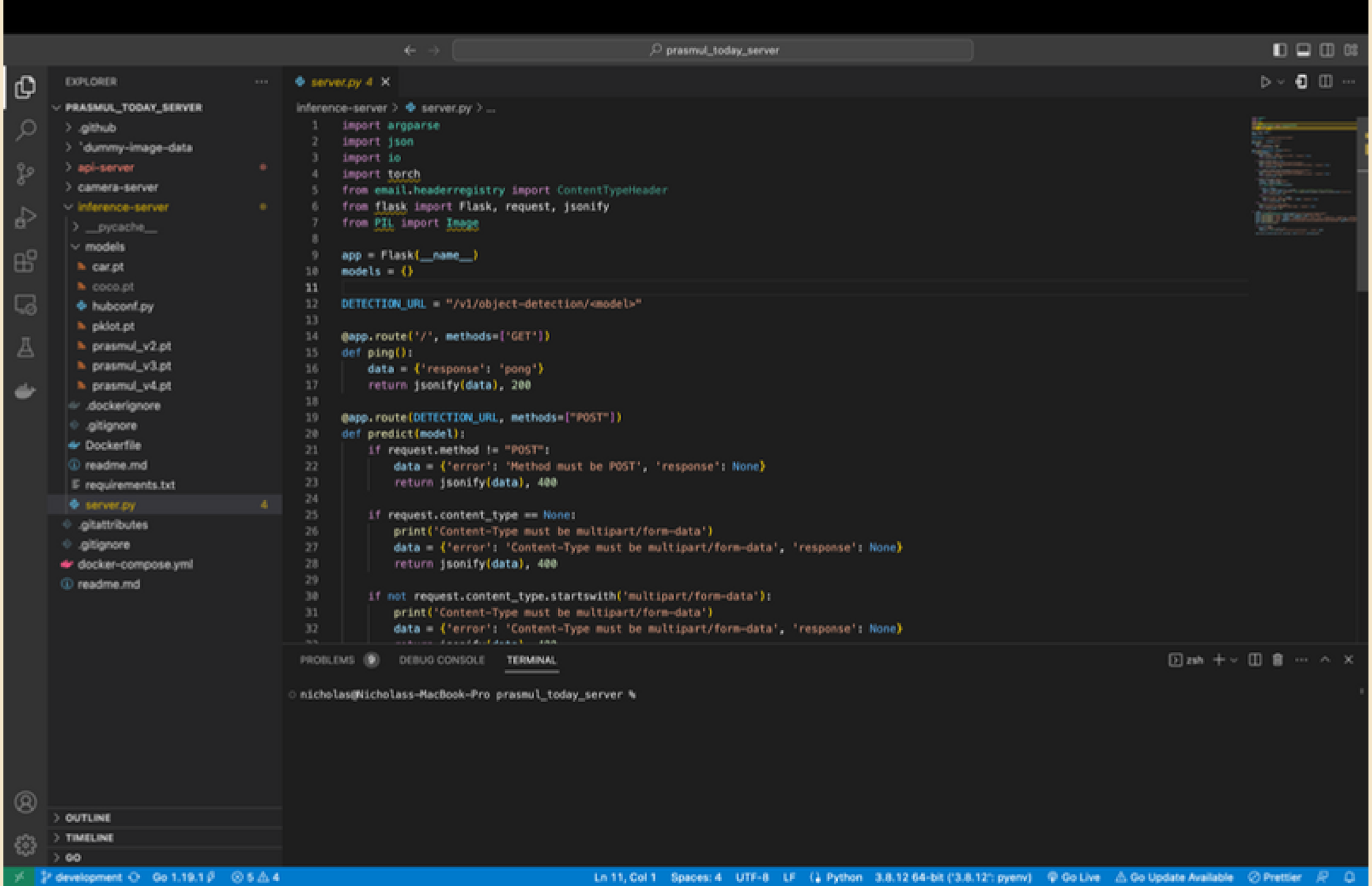
Prettier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server.py 4
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camera-server
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hubconf.py
pklot.pt
prasmul_v2.pt
prasmul_v3.pt
prasmul_v4.pt
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.gitignore
Dockerfile
readme.md
requirements.txt
server.py
.gitattributes
.gitignore
docker-compose.yml
readme.md
inference-server > server.py > ...
import argparse
import json
import io
import torch
from email.headerregistry import ContentTypeHeader
from flask import Flask, request, jsonify
from PIL import Image
app = Flask(__name__)
models = {}
DETECTION_URL = "/v1/object-detection/<model>"
@app.route('/', methods=['GET'])
def ping():
data = {'response': 'pong'}
return jsonify(data), 200
@app.route(DETECTION_URL, methods=["POST"])
def predict(model):
if request.method != "POST":
data = {'error': 'Method must be POST', 'response': None}
return jsonify(data), 400
if request.content_type == None:
print('Content-Type must be multipart/form-data')
data = {'error': 'Content-Type must be multipart/form-data', 'response': None}
return jsonify(data), 400
if not request.content_type.startswith('multipart/form-data'):
print('Content-Type must be multipart/form-data')
data = {'error': 'Content-Type must be multipart/form-data', 'response': None}
PROBLEMS
DEBUG CONSOLE
TERMINAL
zsh
nicholas@Nicholass-MacBook-Pro prasmul_today_server %
OUTLINE
TIMELINE
GO
development
Go 1.19.1
Ln 11, Col 1
Spaces: 4
UTF-8
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Python
3.8.12 64-bit ('3.8.12': pyenv)
Go Live
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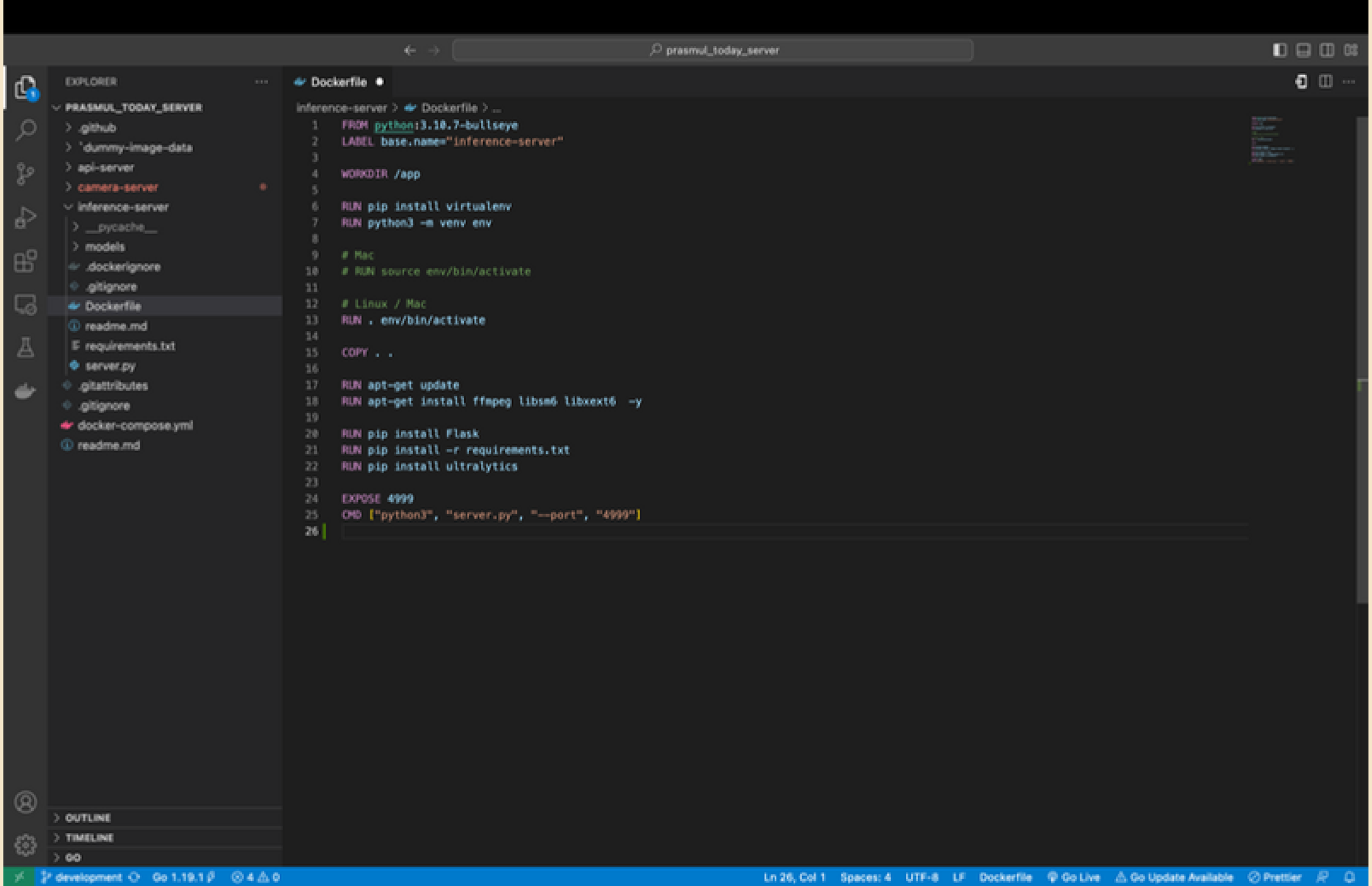
Prettier


prasmul_today_server
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PRASMUL_TODAY_SERVER
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dummy-image-data
api-server
camera-server
inference-server
__pycache__
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.dockerignore
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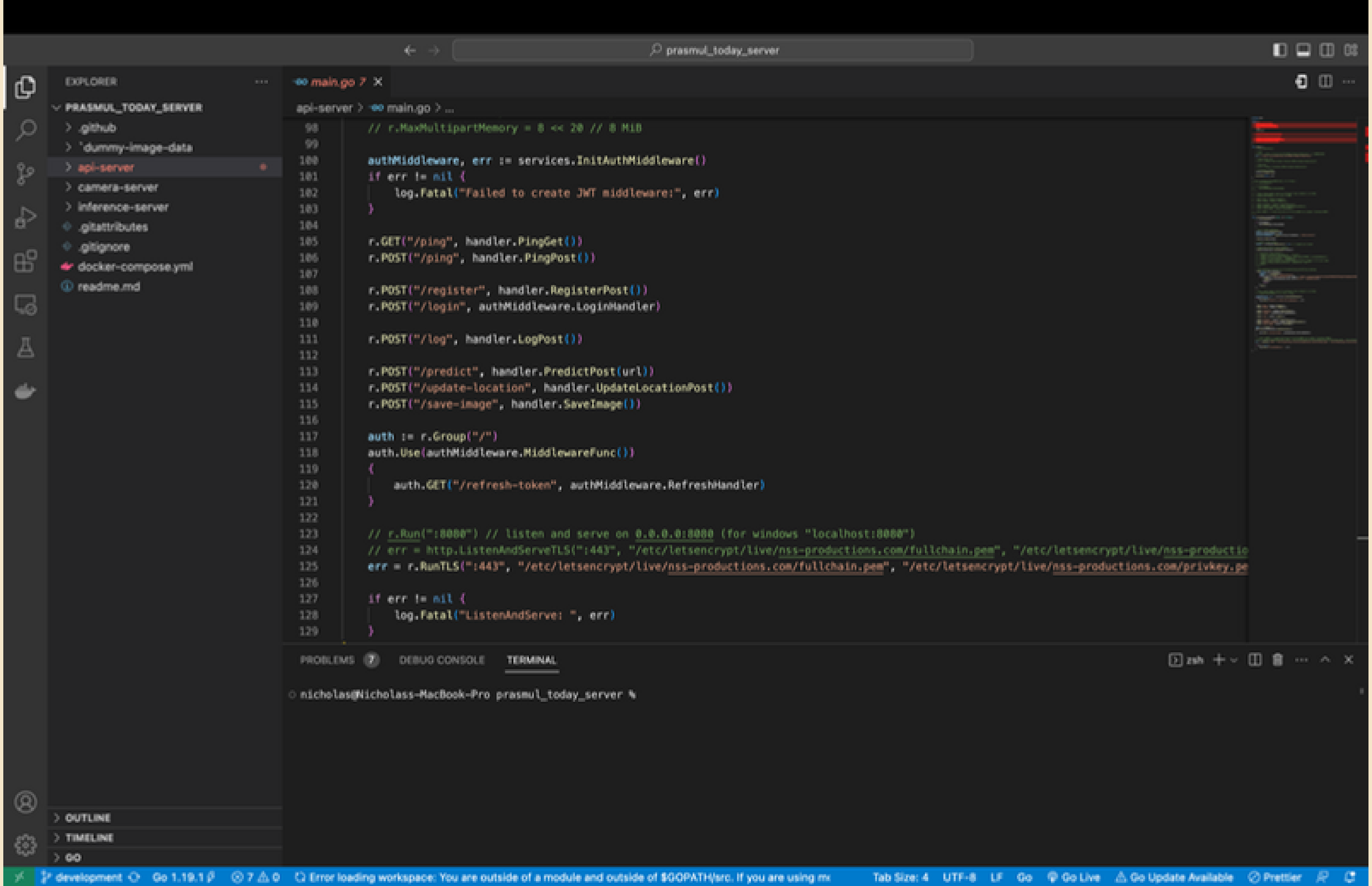
readme.md
requirements.txt
server.py
.gitattributes
.gitignore
docker-compose.yml
readme.md
OUTLINE
TIMELINE
GO
Dockerfile
inference-server > Dockerfile > ...
1 FROM python:3.10.7-bullseye
2 LABEL base.name="inference-server"
3
4 WORKDIR /app
5
6 RUN pip install virtualenv
7 RUN python3 -m venv env
8
9 # Mac
10 # RUN source env/bin/activate
11
12 # Linux / Mac
13 RUN . env/bin/activate
14
15 COPY . .
16
17 RUN apt-get update
18 RUN apt-get install ffmpeg libsm6 libxext6 -y
19
20 RUN pip install Flask
21 RUN pip install -r requirements.txt
22 RUN pip install ultralytics
23
24 EXPOSE 4999
25 CMD ["python3", "server.py", "--port", "4999"]
26
development
Go 1.19.1
4 0
Ln 26, Col 1
Spaces: 4
UTF-8
LF
Dockerfile
Go Live
Go Update Available
Prettier


prasmul_today_server
EXPLORER
PRASMUL_TODAY_SERVER
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dummy-image-data
api-server
camera-server
inference-server
.gitattributes
.gitignore
docker-compose.yml
readme.md
main.go 7
api-server > main.go > ...
// r.MaxMultipartMemory = 8 << 20 // 8 MiB
authMiddleware, err := services.InitAuthMiddleware()
if err != nil {
log.Fatal("Failed to create JWT middleware:", err)
}
r.GET("/ping", handler.PingGet())
r.POST("/ping", handler.PingPost())
r.POST("/register", handler.RegisterPost())
r.POST("/login", authMiddleware.LoginHandler)
r.POST("/log", handler.LogPost())
r.POST("/predict", handler.PredictPost(url))
r.POST("/update-location", handler.UpdateLocationPost())
r.POST("/save-image", handler.SaveImage())
auth := r.Group("/")
auth.Use(authMiddleware.MiddlewareFunc())
{
auth.GET("/refresh-token", authMiddleware.RefreshHandler)
}
// r.Run(":8080") // listen and serve on 0.0.0.0:8080 (for windows "localhost:8080")
// err = http.ListenAndServeTLS(":443", "/etc/letsencrypt/live/nss-productions.com/fullchain.pem", "/etc/letsencrypt/live/nss-productio
err = r.RunTLS(":443", "/etc/letsencrypt/live/nss-productions.com/fullchain.pem", "/etc/letsencrypt/live/nss-productions.com/privkey.pe
if err != nil {
log.Fatal("ListenAndServe: ", err)
}
PROBLEMS 7
DEBUG CONSOLE
TERMINAL
zsh
nicholas@Nicholass-MacBook-Pro prasmul_today_server %
OUTLINE
TIMELINE
GO
development
Go 1.19.1
7 0
Error loading workspace: You are outside of a module and outside of $GOPATH/src. If you are using m
Tab Size: 4
UTF-8
LF
Go
Go Live
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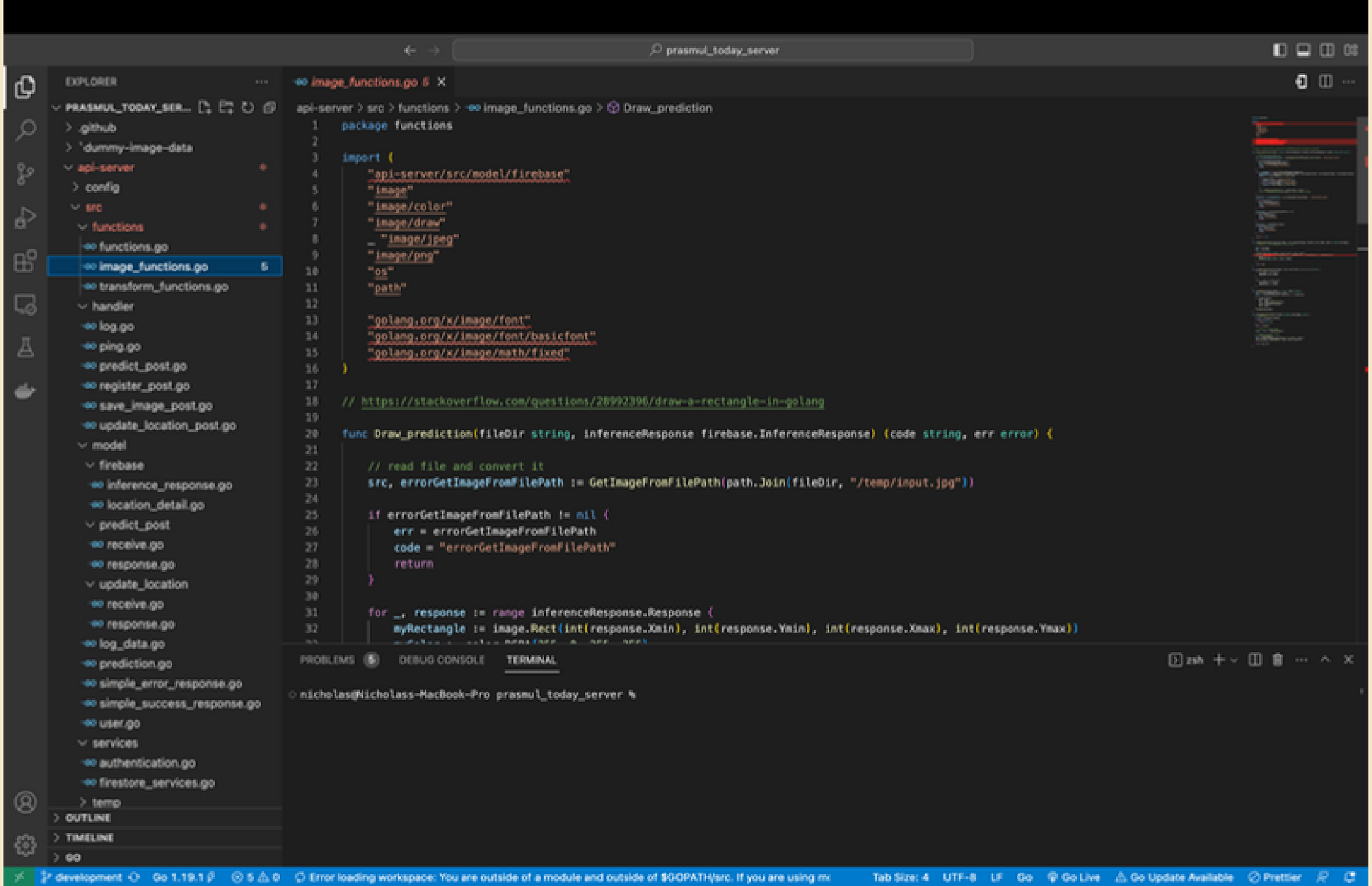
prasmul_today_server
EXPLORER
image_functions.go 6
api-server > src > functions > image_functions.go > Draw_prediction
PRASMUL_TODAY_SER...
.github
dummy-image-data
api-server
config
src
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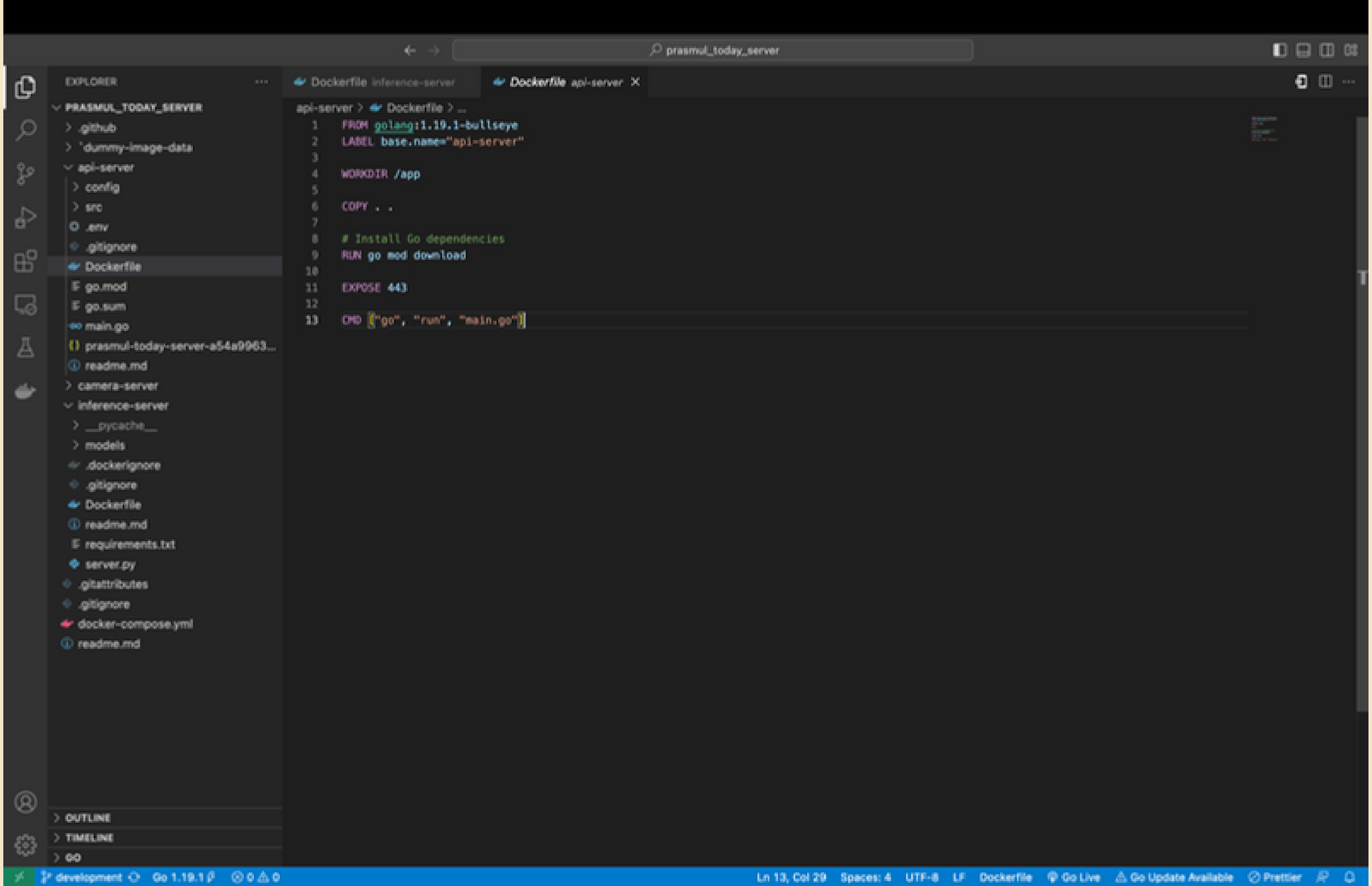
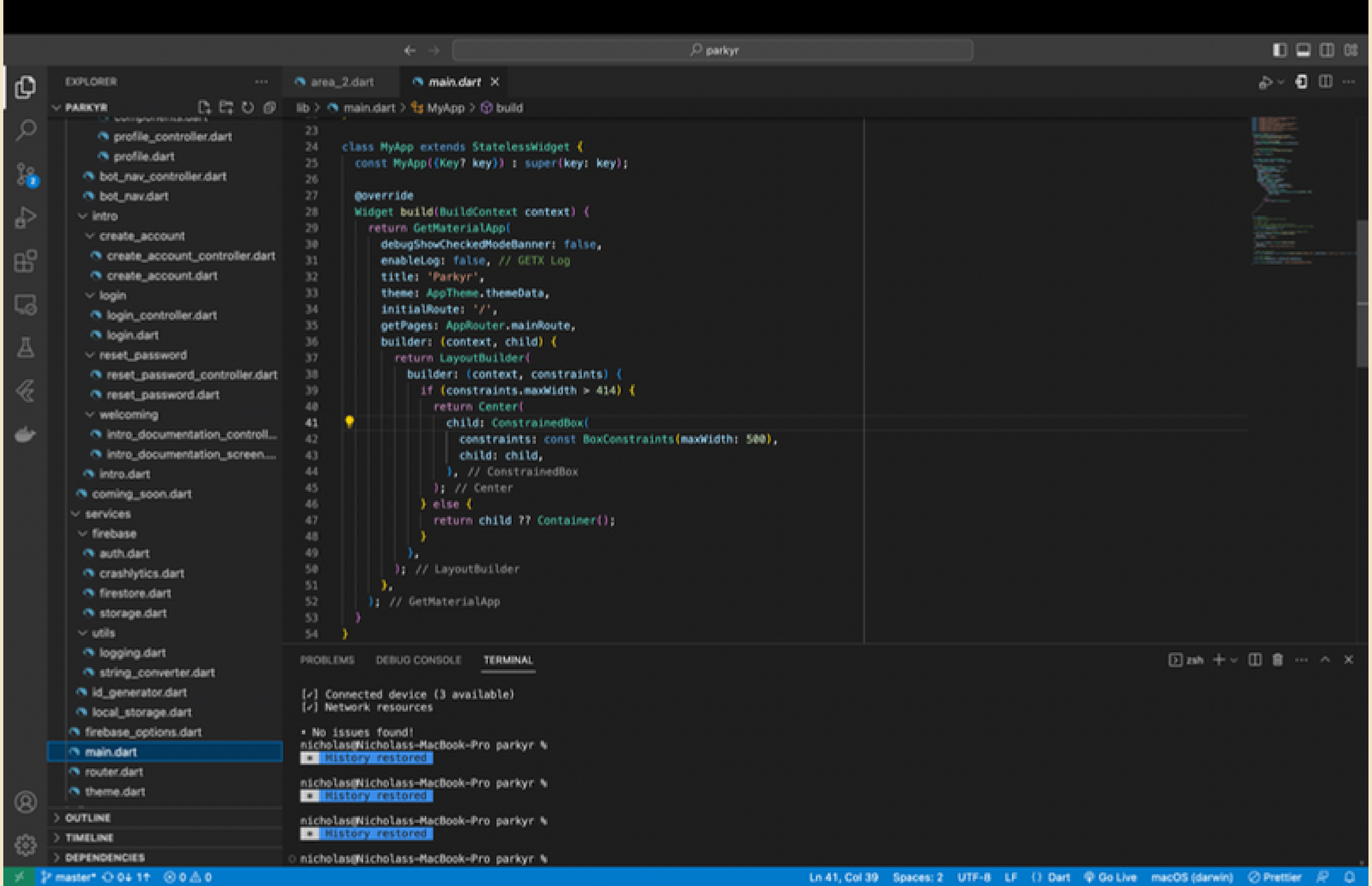
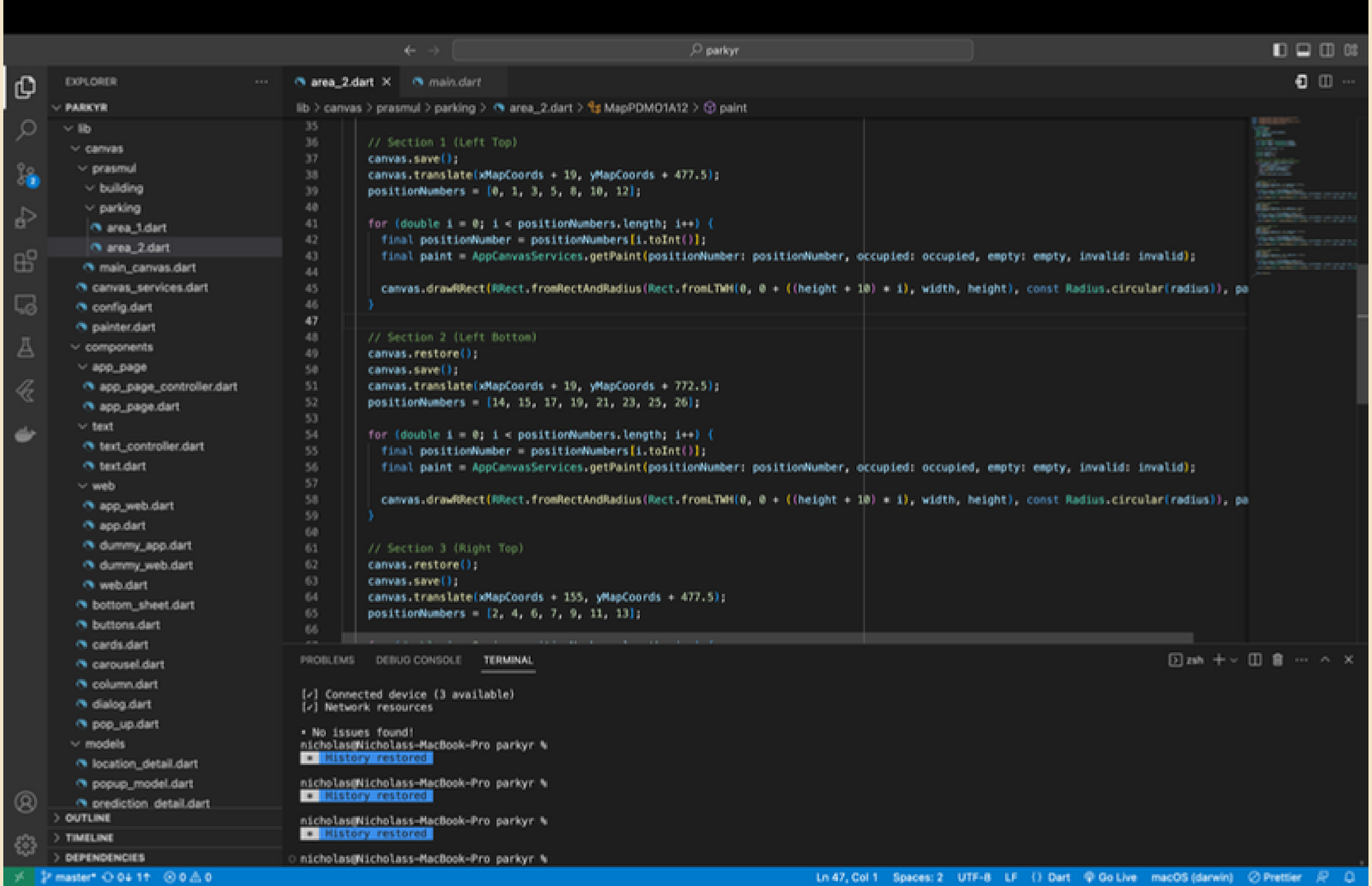
functions.go
image_functions.go 6
transform_functions.go
handler
log.go
ping.go
predict_post.go
register_post.go
save_image_post.go
update_location_post.go
model
firebase
inference_response.go
location_detail.go
predict_post
receive.go
response.go
update_location
receive.go
response.go
log_data.go
prediction.go
simple_error_response.go
simple_success_response.go
user.go
services
authentication.go
firestore_services.go
temp
OUTLINE
TIMELINE
GO
1 package functions
2
3 import (
4 "api-server/src/model/firebase"
5 "image"
6 "image/color"
7 "image/draw"
8 _ "image/jpeg"
9 "image/png"
10 "os"
11 "path"
12
13 "golang.org/x/image/font"
14 "golang.org/x/image/font/basicfont"
15 "golang.org/x/image/math/fixed"
16)
17
18 // https://stackoverflow.com/questions/28992396/draw-a-rectangle-in-golang
19
20 func Draw_prediction(fileDir string, inferenceResponse firebase.InferenceResponse) (code string, err error) {
21
22 // read file and convert it
23 src, errorGetImageFromFilePath := GetImageFromFilePath(path.Join(fileDir, "/temp/input.jpg"))
24
25 if errorGetImageFromFilePath != nil {
26 err = errorGetImageFromFilePath
27 code = "errorGetImageFromFilePath"
28 return
29 }
30
31 for _, response := range inferenceResponse.Response {
32 myRectangle := image.Rect(int(response.Xmin), int(response.Ymin), int(response.Xmax), int(response.Ymax))
PROBLEMS 6
DEBUG CONSOLE
TERMINAL
zsh
nicholas@Nicholass-MacBook-Pro prasmul_today_server %
development
Go 1.19.1
5 0
Error loading workspace: You are outside of a module and outside of $GOPATH/src. If you are using m
Tab Size: 4
UTF-8
LF
Go
Go Live
Go Update Available
Prettier


prasmul_today_server
EXPLORER
PRASMUL_TODAY_SERVER
.github
dummy-image-data
api-server
config
src
.env
.gitignore
Dockerfile
go.mod
go.sum
main.go
prasmul-today-server-a54a9963...
readme.md
camera-server
inference-server
__pycache__
models
.dockerignore
.gitignore
Dockerfile
readme.md
requirements.txt
server.py
.gitattributes
.gitignore
docker-compose.yml
readme.md
OUTLINE
TIMELINE
GO
Dockerfile inference-server
Dockerfile api-server
api-server > Dockerfile > ...
1 FROM golang:1.19.1-bullseye
2 LABEL base.name="api-server"
3
4 WORKDIR /app
5
6 COPY . .
7
8 # Install Go dependencies
9 RUN go mod download
10
11 EXPOSE 443
12
13 CMD ["go", "run", "main.go"]
development
Go 1.19.1
Ln 13, Col 29
Spaces: 4
UTF-8
LF
Dockerfile
Go Live
Go Update Available
Prettier


parkyr
EXPLORER
PARKYR
profile_controller.dart
profile.dart
bot_nav_controller.dart
bot_nav.dart
intro
create_account
create_account_controller.dart
create_account.dart
login
login_controller.dart
login.dart
reset_password
reset_password_controller.dart
reset_password.dart
welcoming
intro_documentation_controll...
intro_documentation_screen....
intro.dart
coming_soon.dart
services
firebase
auth.dart
crashlytics.dart
firestore.dart
storage.dart
utils
logging.dart
string_converter.dart
id_generator.dart
local_storage.dart
firebase_options.dart
main.dart
router.dart
theme.dart
OUTLINE
TIMELINE
DEPENDENCIES
area_2.dart
main.dart
lib > main.dart > MyApp > build
class MyApp extends StatelessWidget {
const MyApp({Key? key}) : super(key: key);
@override
Widget build(BuildContext context) {
return GetMaterialApp(
debugShowCheckedModeBanner: false,
enableLog: false, // GETX Log
title: 'Parkyr',
theme: AppTheme.themeData,
initialRoute: '/',
getPages: AppRouter.mainRoute,
builder: (context, child) {
return LayoutBuilder(
builder: (context, constraints) {
if (constraints.maxWidth > 414) {
return Center(
child: ConstrainedBox(
constraints: const BoxConstraints(maxWidth: 500),
child: child,
), // ConstrainedBox
); // Center
} else {
return child ?? Container();
}
},
); // LayoutBuilder
},
); // GetMaterialApp
}
}
PROBLEMS
DEBUG CONSOLE
TERMINAL
zsh
[✓] Connected device (3 available)
[✓] Network resources
• No issues found!
nicholas@Nicholass-MacBook-Pro parkyr %
History restored
nicholas@Nicholass-MacBook-Pro parkyr %
History restored
nicholas@Nicholass-MacBook-Pro parkyr %
History restored
nicholas@Nicholass-MacBook-Pro parkyr %
master*
Ln 41, Col 39
Spaces: 2
UTF-8
LF
Dart
Go Live
macOS (darwin)
Prettier


parkyr
EXPLORER
area_2.dart
main.dart
lib > canvas > prasmul > parking > area_2.dart > MapPDMO1A12 > paint
PARKYR
lib
canvas
prasmul
building
parking
area_1.dart
area_2.dart
main_canvas.dart
canvas_services.dart
config.dart
painter.dart
components
app_page
app_page_controller.dart
app_page.dart
text
text_controller.dart
text.dart
web
app_web.dart
app.dart
dummy_app.dart
dummy_web.dart
web.dart
bottom_sheet.dart
buttons.dart
cards.dart
carousel.dart
column.dart
dialog.dart
pop_up.dart
models
location_detail.dart
popup_model.dart
prediction_detail.dart
OUTLINE
TIMELINE
DEPENDENCIES
// Section 1 (Left Top)
canvas.save();
canvas.translate(xMapCoords + 19, yMapCoords + 477.5);
positionNumbers = [0, 1, 3, 5, 8, 10, 12];
for (double i = 0; i < positionNumbers.length; i++) {
final positionNumber = positionNumbers[i.toInt()];
final paint = AppCanvasServices.getPaint(positionNumber: positionNumber, occupied: occupied, empty: empty, invalid: invalid);
canvas.drawRRect(RRect.fromRectAndRadius(Rect.fromLTWH(0, 0 + ((height + 10) * i), width, height), const Radius.circular(radius)), pa
}
// Section 2 (Left Bottom)
canvas.restore();
canvas.save();
canvas.translate(xMapCoords + 19, yMapCoords + 772.5);
positionNumbers = [14, 15, 17, 19, 21, 23, 25, 26];
for (double i = 0; i < positionNumbers.length; i++) {
final positionNumber = positionNumbers[i.toInt()];
final paint = AppCanvasServices.getPaint(positionNumber: positionNumber, occupied: occupied, empty: empty, invalid: invalid);
canvas.drawRRect(RRect.fromRectAndRadius(Rect.fromLTWH(0, 0 + ((height + 10) * i), width, height), const Radius.circular(radius)), pa
}
// Section 3 (Right Top)
canvas.restore();
canvas.save();
canvas.translate(xMapCoords + 155, yMapCoords + 477.5);
positionNumbers = [2, 4, 6, 7, 9, 11, 13];
PROBLEMS
DEBUG CONSOLE
TERMINAL
zsh
[✓] Connected device (3 available)
[✓] Network resources
• No issues found!
nicholas@Nicholass-MacBook-Pro parkyr %
History restored
nicholas@Nicholass-MacBook-Pro parkyr %
History restored
nicholas@Nicholass-MacBook-Pro parkyr %
History restored
nicholas@Nicholass-MacBook-Pro parkyr %
master*
Ln 47, Col 1
Spaces: 2
UTF-8
LF
Dart
Go Live
macOS (darwin)
Prettier

CSE | 2023

THANK YOU!

Presentation by **Nicholas Stancio Saka**