EECS 581/582 Final Project

Team 18

Project Artifacts

The following diagram shows what the flow of our project would look like:

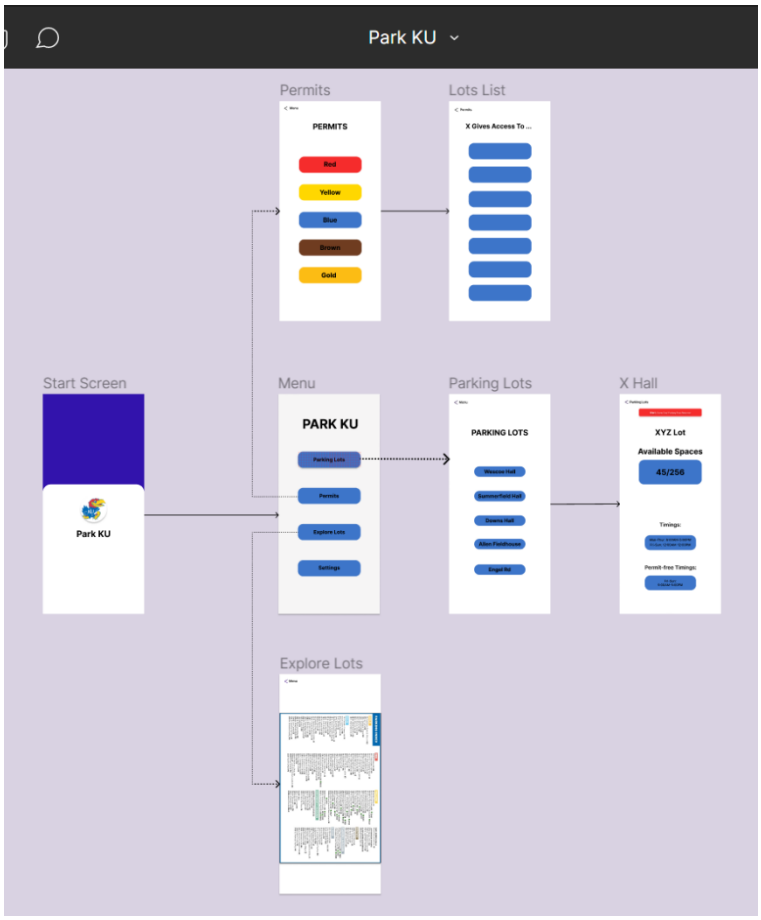

Fig5: The flow of our project; ParkKU

The tentative flow of our app can be viewed on the following link:

https://github.com/hzahid99/EECS-Final-Project/blob/main/Demo%20of%20the%20app.mp4

The following GitHub repository holds our progress so far:

https://github.com/hzahid99/EECS-Final-Project

Below are some of the figures that show how we are training our machine learning component of the app to detect cars. This will enable us to increment/decrement the cars as they enter/leave the lot.

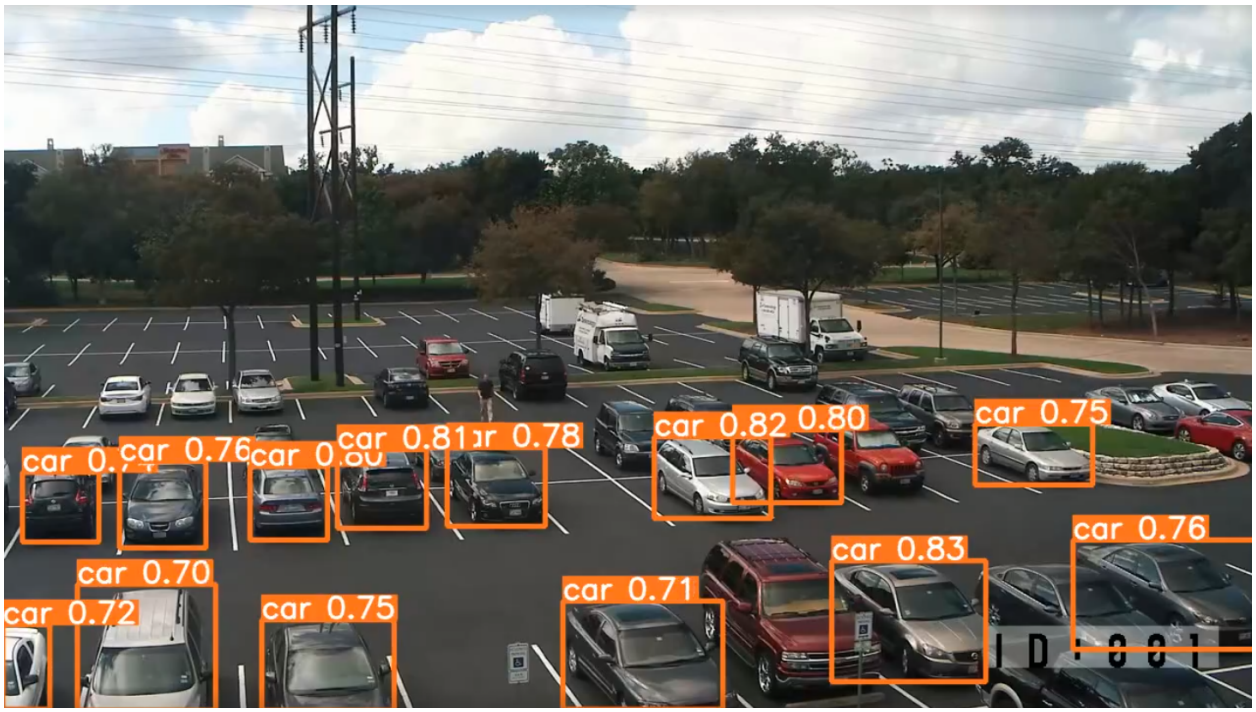

Fig1: Detection of cars

```
%cd /content/yolov5

from roboflow import Roboflow

rf = Roboflow(api_key="iq9O2jVL4DCXGhvxCASc")
project = rf.workspace("new-workspace-29pun").project("parking-occupancy-dataset-al6")
dataset = project.version(5).download("yolov5")
```

```
/content/yolov5
loading Roboflow workspace...
loading Roboflow project...
Downloading Dataset Version Zip in Parking-Occupancy-Dataset-Al6-5 to yolov5pytorch: 100% [24322382 / 24322382] bytes

Extracting Dataset Version Zip to Parking-Occupancy-Dataset-Al6-5 in yolov5pytorch:: 100%|██████████| 462/462 [00:00<00:00, 636.60it/s]
```

```
# this is the YAML file Roboflow wrote for us that we're loading into this notebook with our data
%cat {dataset.location}/data.yaml
```

```
names:
- free
- occupied
nc: 2
train: Parking-Occupancy-Dataset-Al6-5/train/images
val: Parking-Occupancy-Dataset-Al6-5/valid/images
```

Fig2: Loading dataset and checking the classes

Fig3: Metrics on the model

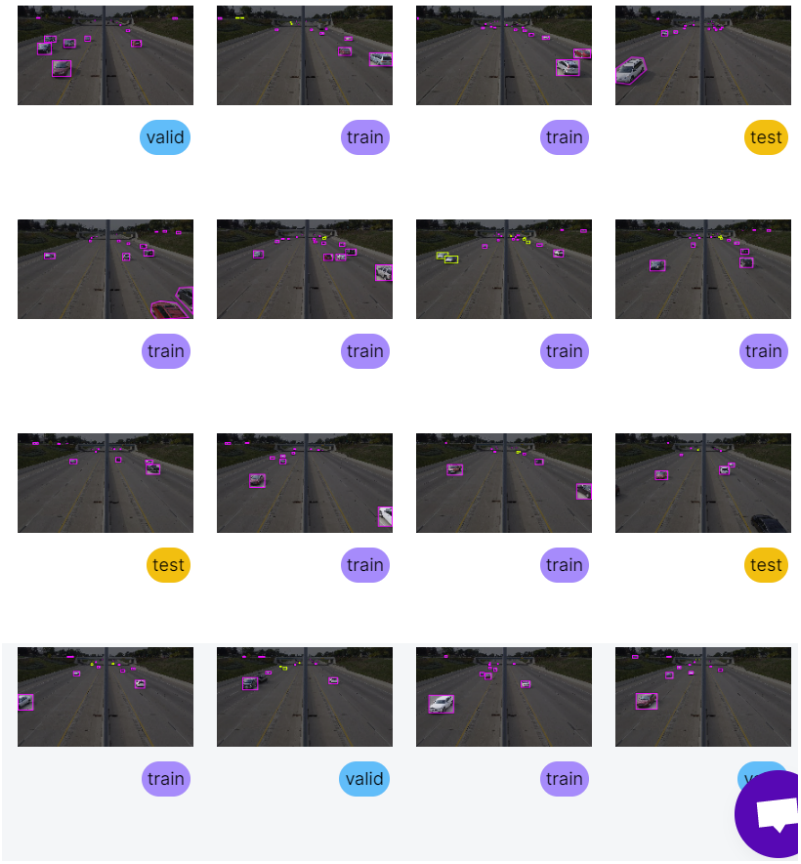

Fig4: Example of Images we used to manually annotate cars on Roboflow

Following are the screenshots of the screens we have made so far for the app:

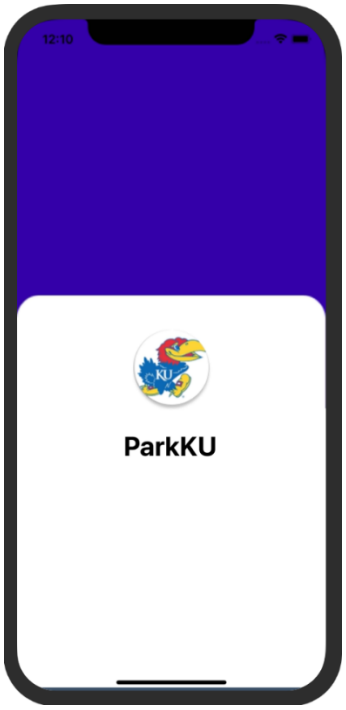

Fig5: Start Screen of the app

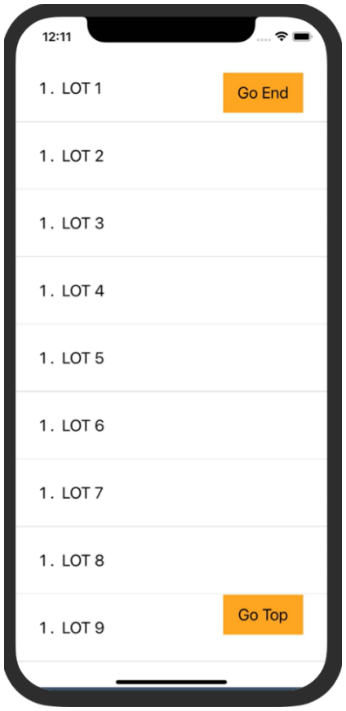

Fig6: Screen that will list down all the lots and permits they require

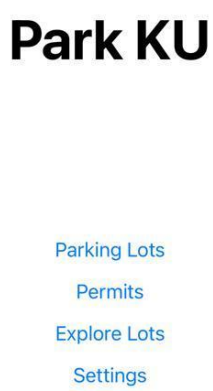

Fig7: Menu Screen

Fig8: Permits Screen