For Viewing the Dashboard

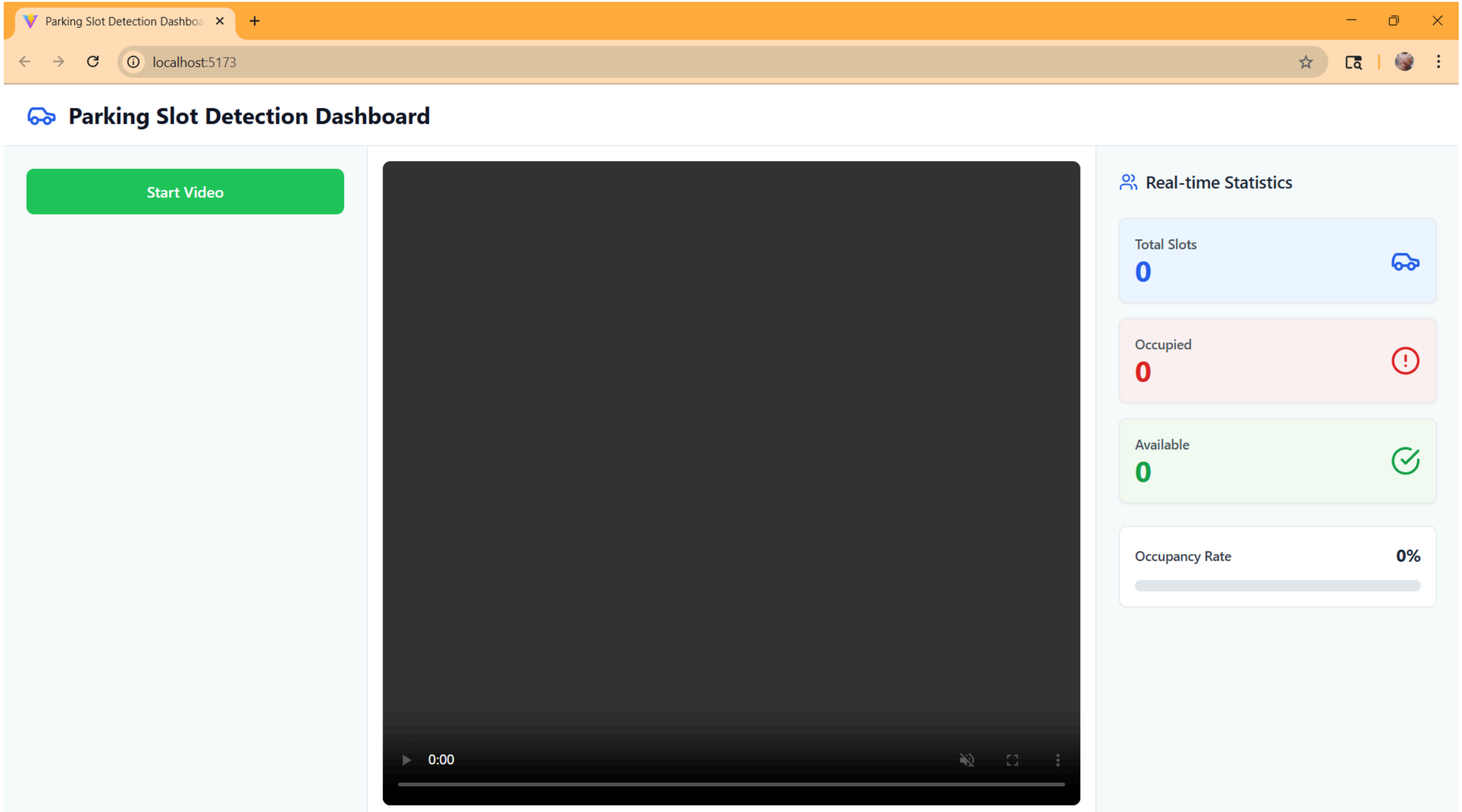
Step 1: From **ParkingSlotDetector_2\parking-dashboard** directory open cmd and run **npm install**

```
D:\Somnath\Projects\Parking_Slot_Detection\ParkingSlotDetector_2\parking-dashboard>npm install
```

Step 2: Run **npm run dev**

```
D:\Somnath\Projects\Parking_Slot_Detection\ParkingSlotDetector_2\parking-dashboard>npm run dev

> parking-dashboard@0.0.0 dev
> vite


  VITE v5.4.19  ready in 1533 ms

  → Local:   http://localhost:5173/
  → Network: use --host to expose
  → press h + enter to show help
```

Step 3: Open the Local link on Chrome Browser (Recommended)



Step 4: (Optional Step) As the output files are already generated

```
D:\Somnath\Projects\Parking_Slot_Detection\ParkingSlotDetector_2\parking-dashboard\model>python main.py
======================================================================
🅿️  ENHANCED YOLO PARKING DETECTION SYSTEM
======================================================================

🔧 Features:
• Multi-method vehicle detection (Standard + Enhanced + Histogram Equalization)
• Visual analysis fallback for missed vehicles
• Temporal smoothing for stable results
• Real-time CSV output with detection methods
• Interactive parking space selection

🎨 Attributions:
• YOLO Algorithm: Ultralytics YOLOv8
• COCO Dataset: Microsoft
• Enhanced detection logic: Original implementation
======================================================================

🔧 Found existing parking configuration. Use it? (y/n): y
📹 Output video name (default: enhanced_yolo_parking.mp4):
📊 CSV output name (default: parking_analysis.csv):

🚀 Starting enhanced processing...
Setting up YOLO model...
Using Ultralytics YOLOv8s
✓ Model loaded and warmed up successfully
📹 Processing video: 848x478 @ 30fps, 725 frames
Trying codec: X264
OpenCV: FFMPEG: tag 0x34363258/'X264' is not supported with codec id 27 and format 'mp4 / MP4 (MPEG-4 Part 14)'
OpenCV: FFMPEG: fallback to use tag 0x31637661/'avc1'

Failed to load OpenH264 library: openh264-1.8.0-win64.dll
        Please check environment and/or download library: https://github.com/cisco/openh264/releases

[libopenh264 @ 000001ce0c568540] Incorrect library version loaded
[ERROR:0@0.088] global cap_ffmpeg_impl.hpp:3268 open Could not open codec libopenh264, error: Unspecified error (-22)
[ERROR:0@0.088] global cap_ffmpeg_impl.hpp:3285 open VIDEOIO/FFMPEG: Failed to initialize VideoWriter
✓ Successfully using X264 codec
```

Open cmd from the **ParkingSlotDetector_2\parking-dashboard\model** directory and run **python main.py**

enter **y** when promted and hit enter

Hit enter when prompted for .csv and .mp4 name to use the default names

Wait for it to complete, the speed will depend on the CPU

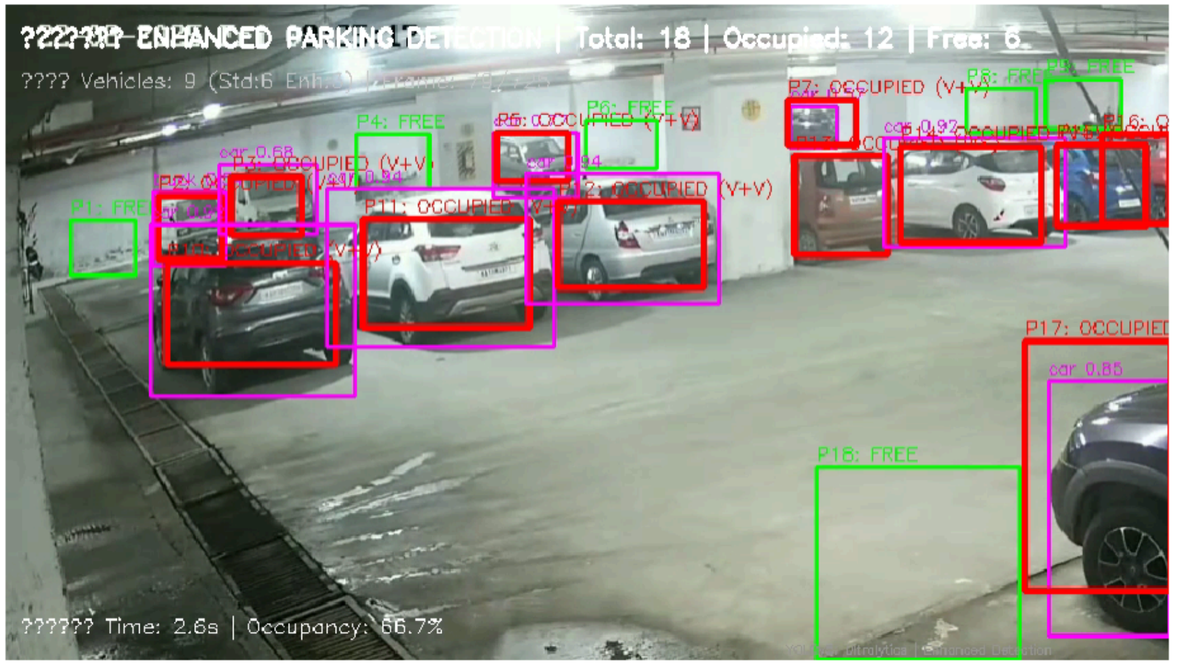
```
[libopenh264 @ 000001ce0c568540] Incorrect library version loaded
[ERROR:0@0.088] global cap_ffmpeg_impl.hpp:3268 open Could not open codec libopenh264, error: Unspecified error (-22)
[ERROR:0@0.088] global cap_ffmpeg_impl.hpp:3285 open VIDEOIO/FFMPEG: Failed to initialize VideoWriter
√ Successfully using X264 codec
📊 Progress: 30/725 (4.1%) | FPS: 0.2
📊 Progress: 60/725 (8.3%) | FPS: 0.2
📊 Progress: 90/725 (12.4%) | FPS: 0.2
📊 Progress: 120/725 (16.6%) | FPS: 0.2
📊 Progress: 150/725 (20.7%) | FPS: 0.2
📊 Progress: 180/725 (24.8%) | FPS: 0.2
📊 Progress: 210/725 (29.0%) | FPS: 0.2
📊 Progress: 240/725 (33.1%) | FPS: 0.2
📊 Progress: 270/725 (37.2%) | FPS: 0.2
📊 Progress: 300/725 (41.4%) | FPS: 0.2
📊 Progress: 330/725 (45.5%) | FPS: 0.2
📊 Progress: 360/725 (49.7%) | FPS: 0.2
📊 Progress: 390/725 (53.8%) | FPS: 0.2
📊 Progress: 420/725 (57.9%) | FPS: 0.2
📊 Progress: 450/725 (62.1%) | FPS: 0.2
📊 Progress: 480/725 (66.2%) | FPS: 0.2
📊 Progress: 510/725 (70.3%) | FPS: 0.2
📊 Progress: 540/725 (74.5%) | FPS: 0.2
📊 Progress: 570/725 (78.6%) | FPS: 0.2
📊 Progress: 600/725 (82.8%) | FPS: 0.2
📊 Progress: 630/725 (86.9%) | FPS: 0.2
📊 Progress: 660/725 (91.0%) | FPS: 0.2
📊 Progress: 690/725 (95.2%) | FPS: 0.2
📊 Progress: 720/725 (99.3%) | FPS: 0.2
📊 Progress: 725/725 (100.0%) | FPS: 0.2

✅ Processing complete!
📼 Output video: enhanced_yolo_parking.mp4
📊 CSV results: parking_analysis.csv
⏱️ Processing time: 3928.2s
🔄 Average FPS: 0.2

🎉 All done! Check your output files:
📼 Video: enhanced_yolo_parking.mp4
📊 Data: parking_analysis.csv
⚙️ Config: parking_spaces_config.json

D:\Somnath\Projects\Parking_Slot_Detection\ParkingSlotDetector_2\parking-dashboard\model>
```

Step 5: Refresh the page, the real time monitoring will be enabled

localhost:5173

Parking Slot Detection Dashboard

Stop Video



Real-time Statistics

Total Slots
18

Occupied
12

Available
6

Occupancy Rate 67%