External assessment 2025

Stimulus book

Digital Solutions

General instruction

- Work in this book will not be marked.

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Stimulus 1

The JSON sample shows review data for two movies.

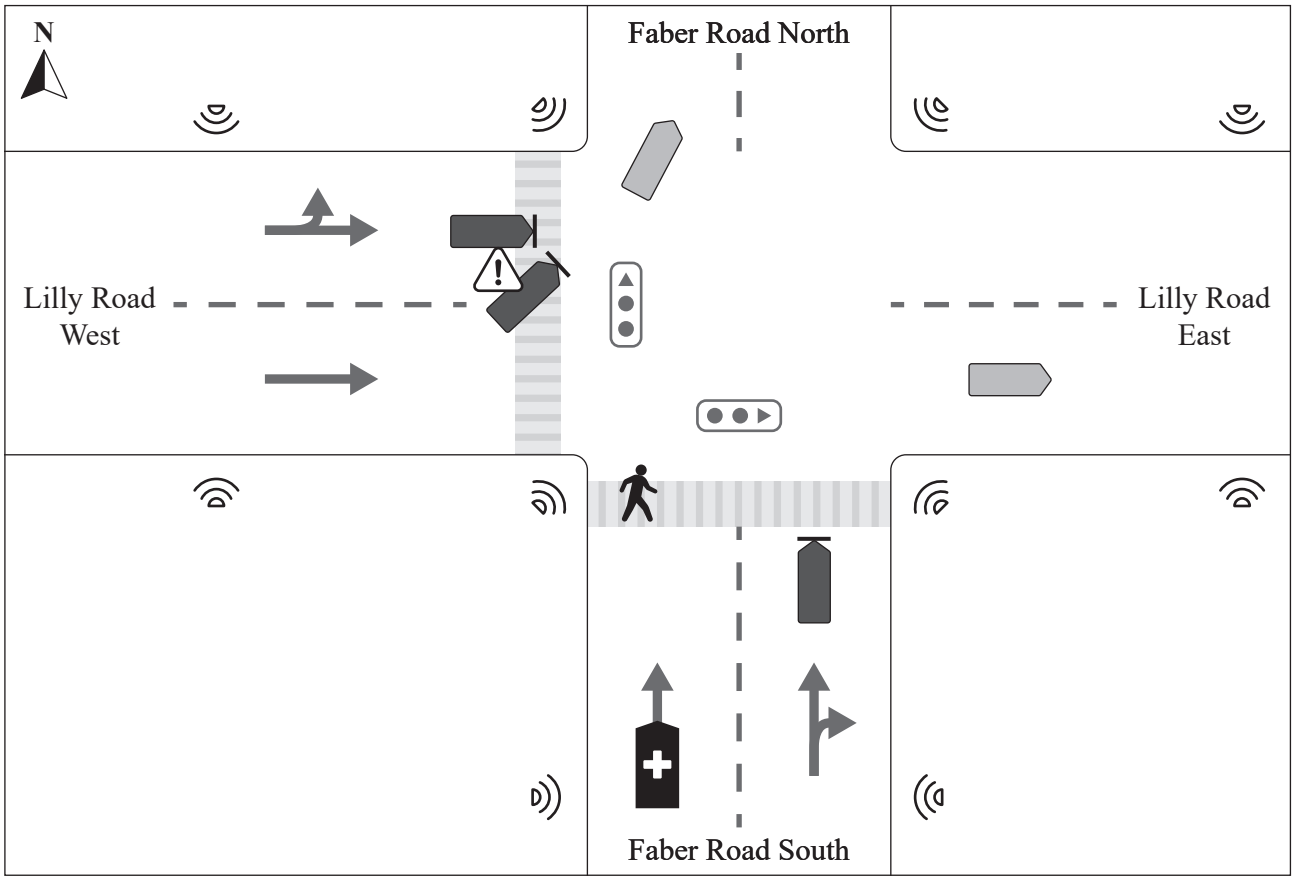
```
{
  "movies": [{
      "title": "The Legends List",
      "reviews": [{
          "review_id": 1,
          "reviewer_name": "Amanda",
          "rating": 5,
          "review_text": "Amazing movie!"
        },
        {
          "review_id": 2,
          "reviewer_name": "Julian",
          "rating": 4,
          "review_text": "Great concept"
        },
        {
          "review_id": 3,
          "reviewer_name": "Saoirse",
          "rating": 3,
          "review_text": "Average"
        }
      ]
    },
    {
      "title": "The Sequel",
      "reviews": [{
          "review_id": 1,
          "reviewer_name": "Gary",
          "rating": 2,
          "review_text": "Nope"
        },
        {
          "review_id": 2,
          "reviewer_name": "Jaspreet",
          "rating": 1,
          "review_text": "Why?"
        },
        {
          "review_id": 3,
          "reviewer_name": "Kim",
          "rating": 2,
          "review_text": "Two hours of my life I'd like back, please!"
        }
      ]
    }
  ]
}
```

Stimulus 2

Real-time data are collected to monitor the status of adaptive traffic signals, pedestrian signals and traffic conditions. The code library of functions enables the processing of real-time data for the smart traffic management system.

Function call: `getAdaptiveSignal(signal_name)` **Purpose:** This function gets the adaptive traffic signal for a given road or crossing. It returns text describing the signal status, e.g. `"red"`, `"yellow"` or `"green"`
Function call: `setAdaptiveSignal(signal_name, signal)` **Purpose:** This function sets the adaptive traffic signal for a given road or crossing.
Function call: `evaluateCongestion(signal_name)` **Purpose:** This function evaluates the current congestion level for a given road or crossing based on the real-time traffic conditions. It returns text describing the congestion, e.g. `"none"`, `"low"`, `"medium"` or `"high"`
Function call: `getVehicleCount(lane)` **Purpose:** This function retrieves and returns the number of vehicles currently detected on a specific lane. It uses real-time sensor data to estimate traffic volume. It returns the number of vehicles currently detected.

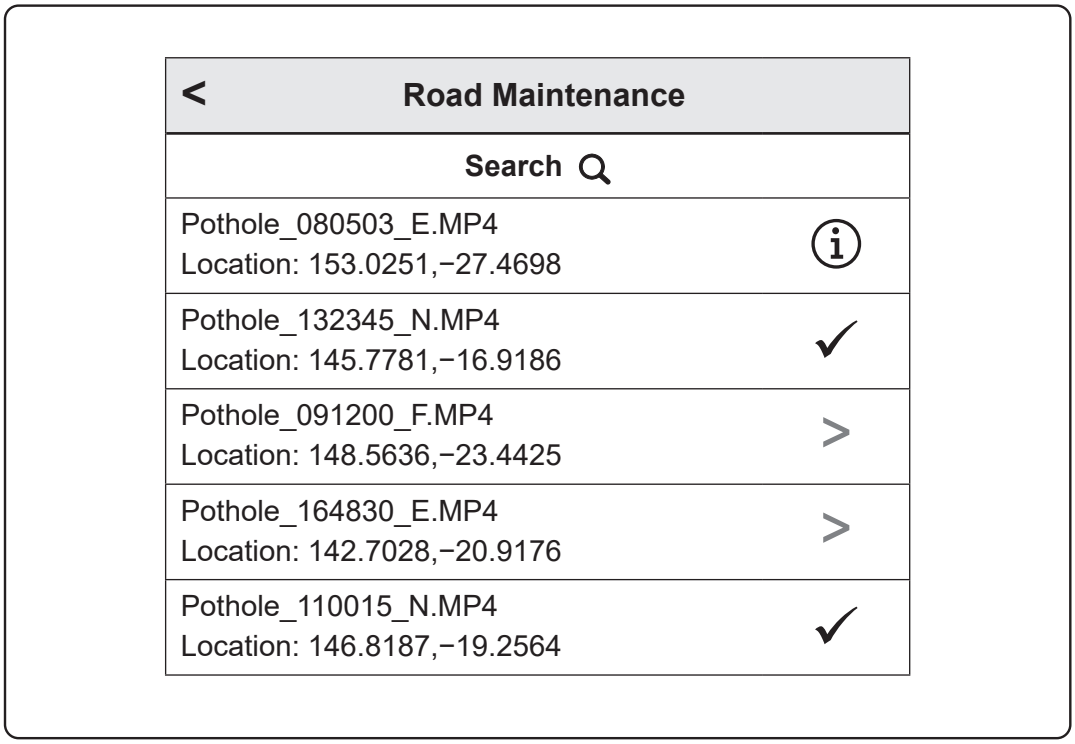
The diagram shows a traffic scenario at the intersection of Lilly Road and Faber Road. Both are one-way roads with two lanes of traffic. All traffic signals for Faber Road are red, and a pedestrian is crossing the road. An accident has occurred on Lilly Road West, and an emergency vehicle is approaching from Faber Road South.



Stimulus 3

A diagram of the user interface of the Road Maintenance mobile app is shown.

Potholes are named according to the filenames of their corresponding dash cam footage. The longitude and latitude of each pothole is also given.



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