**PHASE 2 :- INNOVATION**

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| Project Name | public transport optimization |

**BLOCK DIAGRAM:**

IBM Cloud

Arduino uno

Sensors

Mobile Application

**DEFINE OBJECTIVES:**

The objective of transportation model is to determine the schedule for transportation of goods from source to destination in such a way that minimizes the shipping cost and satisfy all the demand and supply constraints.

**HARDWARE SETUP:**

1. GPS tracking device
2. Passenger counting sensor
3. GIS(geographic information systems)

**Computer Vision with OpenCV:**

* Use OpenCV to capture and process images or video streams from the cameras.
* Implement object detection algorithms to identify vehicles in the images or video frames.
* Use image processing techniques to track the status of each parking space (empty or occupied).

**Data Collection and Processing:**

* Extract relevant information from the images, such as license plate numbers, timestamps, and Parking space IDs.
* Send this data to the IBM Cloud for further processing and storage.

**IBM Cloud Service:**

IBM Watson IoT for device management and data ingestion from the cameras.

**Real-time Updates:**

* Continuously monitor parking spaces and update the status in real-time.
* Use the IBM Cloud services to send updates to users through a mobile app, website, or other Communication channels.

**User Interface:**

Develop a user-friendly interface (web or mobile app) that displays real-time parking availabilit and allows users to reserve or navigate to available public transport.

**Security and Privacy:**

Implement security measures to protect user data and ensure the privacy of individuals using the public transport optimization

**Mobile application:**

Node-RED is an open-source flow-based development tool for visual programming .It is particularly la popular in Internet of Things(IoT).