Challenge 01

INNOVERSE

Introduction :

- Transportation is essential for a smart city's efficiency and economic growth. It includes various modes like **taxis, buses, trains, and trams**, ensuring mobility and connectivity. In a modern urban environment, IoT technologies play a key role in optimizing transportation management by reducing congestion, improving public transit efficiency, and enhancing real-time monitoring. A well-integrated transport system boosts economic activity, supports sustainability, and improves citizens' quality of life.

The Objective of the Challenge :

- In this challenge, you must identify transportation issues in **ORAN city** and propose solutions to improve and develop its transportation **infrastructure**.

Here is some documentation to guide you through the challenge.

Tramway:

- **SETRAM** has been a key player in Algeria's urban transport sector for over a decade, specializing in the operation and maintenance of tramways. **In 2023**, the company proudly transitioned to being 100% Algerian-owned, with a vision to set new standards of excellence in mass transit by providing safer and more efficient mobility services.

- **Oran tramway**, operational since May 1, 2013, spans 19 kilometres of rails, with 32 stations and a team of over 600 employees, showcasing the expertise of over 4,000 Algerian professionals. The tramway connects key areas of the city, including Sidi Maarouf, Hai Sabbah, Plateau Saint Michel, Place du 1er Novembre, and Es Senia.

● **Schedule :**

First Departure: 05:30

Last Departure: 22:00

Waiting Time: 6 minutes

● **Pricing :**

Single Ticket: 40 DA

Monthly Pass:

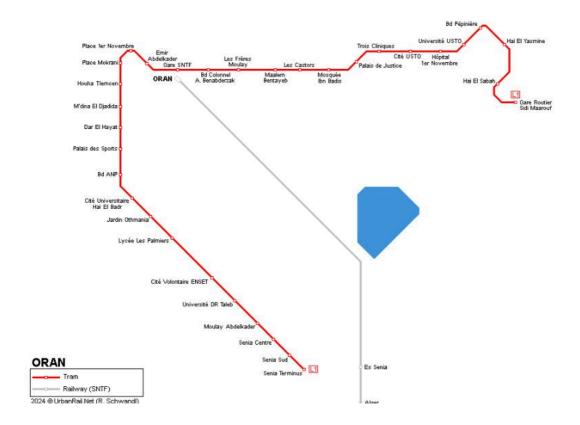- General: 1,000–1,200 DA (based on age)
- Students: 600 DA
- Pupils (over 6): 300 DA

Tramway Stations

Tramway Stations Map

Prohibited Activities and Items:

- To ensure passenger safety and comfort, the following are strictly prohibited:
    - Spitting or smoking
    - Pets
    - Bulky packages or dangerous objects
    - Food consumption
    - Disruptive behaviour

SETRAM remains committed to enhancing urban mobility with a focus on efficiency, safety, and reliability

Some problems that ORAN tramway has:

- **Overcrowding During Peak Hours**

  High passenger demand during peak times may lead to congestion, affecting passenger comfort.

- **Delays and Service Interruptions**

  Technical issues or maintenance needs might occasionally disrupt the regular schedule

- **Inadequate Coverage**

  Some areas of the city might not be well-served by the current tramway route, limiting accessibility for certain residents.

- **Limited Late-Night Service**

  The last departure at 22:00 might not meet the needs of passengers who travel late at night.

- **Non-Functional Passenger Information Panels (PIV)**

  Many PIV screens, intended to provide real-time updates and schedules, often malfunction or remain out of service, leaving passengers uninformed about tram timings or disruptions.

Trains:

- The length of **Algeria's railway network** is continually expanding, reflecting the country's efforts to modernize and extend its transportation infrastructure.

  - **Current Length:** According to recent data, Algeria's railway network spans approximately **4,722 km**.
  - **Short-Term Goals:** Authorities aim to increase this length to **6,300 km** in the near future by completing ongoing projects.
  - **Future Projections:** The long-term objective is to expand the network to a total of **15,000 km** by **2030**, enhancing connectivity between different regions of the country and strengthening the national transport system.

- **ORAN City** is served by a railway network operated by the National Railway Transport Company (**SNTF**). This network includes several stations, with the main one being Oran Station, inaugurated in **1913** and recently designated as a national cultural heritage site.

Oran Train timetable:

● Oran – Algiers:

Trains	Departure	Arrival
1	6h10	12h10
2	8h00 (Coradia)	12h00
3	10h00 (Rapid)	15h00
4	12h30	18h30
5	15h00 (Coradia)	19h00
6	17h00 (rapid)	22h00

● Inverse:

Trains	Departure	Arrival
1	6h10	12h10
2	8h00 (Coradia)	12h00
3	10h00 (Rapid)	15h00
4	12h30	18h30
5	15h00 (Coradia)	19h00
6	17h00 (rapid)	22h00

● Oran – Bechar:

Trains	Departure	Arrival
1	19h40	5h00
2	22h40	8h15

● Inverse:

Trains	Departure	Arrival
1	7h00	17h00
2	22h00	7h25

● Oran – Tlemcen:

Trains	Departure	Arrival
1	16h00	18h32

● Inverse:

Trains	Departure	Arrival
1	05h50	08h09

● **Oran – Meghnia:**

Trains	Departure	Arrival
1	07h30	11h05
2	11h50	16h22

● **Inverse:**

Trains	Departure	Arrival
1	08h50	12h22
2	14h05	14h26

● **Oran – Relizane:**

Trains	Departure	Arrival
1	17h15	18h32

● **Inverse:**

Trains	Departure	Arrival
1	05h45	07h35

● **Oran – Ain Temouchent:**

Trains	Departure	Arrival
1	08h10	09h40
2	13h30	14h31
3	17h02	18h32

● **Inverse:**

Trains	Departure	Arrival
1	06h15	07h14
2	09h30	10h34
3	15h05	16h05

● **Oran – Sid Belabbes:**

Trains	Departure	Arrival
1	17h30	18h52

● **Inverse:**

Trains	Departure	Arrival
1	05h40	06h58

Some problems that ORAN Trains has:

- **Tracks:**

  The train tracks are very old and fragile, which increases the risk of accidents.

- **Trains:**

  Some trains are outdated and frequently experience breakdowns. Additionally, there is a lack of a competent local team to maintain and inspect the trains, leading to a heavy reliance on foreign expertise.

Taxi:

- In Oran city we distinguish **two types of taxis:**

- **1 - Urban Taxi Services in Oran(local):**

  Oran has several urban taxi services to facilitate travel within the city. Some of the main services include:

- **Al Bahia Passenger Transfer Station:**

  Located on the third Peripheral Boulevard, this station is a central hub for taxis in Oran

- **Amir Oran:**

  Based in Bir El Djir 31000, this service is known for its reliability.

- **Yassir Oran:**

  Operating from Point Du Jour, City No. 34, 1st floor, Yassir Oran offers standard taxi services, airport transfers, and scheduled rides.This mobile application functions similarly to Uber.Available for download on the App Store and Google Play, it allows users to book a taxi with just a few clicks.

- **New Initiatives to Improve Urban Transport:**

  To address urban growth and the needs of new residential areas, the Directorate of Transport of Oran Province has recently inaugurated seven new urban and suburban transport lines, including taxi services. These lines aim to serve Oran's new urban hubs, improving connectivity and access to developing areas.

- **Taxi Fares in Oran:**

  The base fare for a taxi ride in Oran is 25.0 DZD, with a rate of 50.0 DZD per kilometer traveled.If the driver has to wait, the charge is 500.0 DZD per hour.

● **2-Inter-Wilaya Taxis:**

- Provide transportation between different wilayas (provinces).
- Operate from designated stations, such as bus terminals.
- Often require reservations or have fixed fares for specific routes (e.g., Oran – Algiers).
- Generally more comfortable and commonly used for long-distance travel.

● **Types of Inter-Wilaya Taxis:**

   ● **Individual Taxis:**

These taxis are typically booked for specific trips between Oran and other provinces.

They are mainly used for private travel or by small groups.

The fares are usually fixed depending on the destination (e.g., Oran – Algiers, Oran – Tlemcen)

- **Types of Inter-Wilaya Taxis:**

  - **Minibuses and Shared Taxis:**

    These taxis carry multiple passengers traveling in the same direction, reducing the cost for each individual.

    Minibuses are often used to transport more passengers at a lower price.

- **Main Stations for Inter-Wilaya Taxis:**

  - **Oran Bus Station (El Bahia):**

    This station serves as a major departure point for inter-wilaya taxis, offering services to popular destinations like **Algiers, Tlemcen, Mostaganem, Relizane, and Sidi Bel Abbès.**

  - **USTO Taxi Station:**

    Located near the **University of Science and Technology of Oran (USTO)**, this station is frequently used for travel to nearby cities and other major locations across the country.

Potential problems with Taxis in Oran:

● **Lack of Regulation and Monitoring:**

There can be issues with **inconsistent** fares, where taxi drivers sometimes charge passengers **more than the standard rate**.

Taxi services may not always adhere to legal regulations, resulting in **poor service qualit**y or **unsafe conditions** for passengers.

● **Overcrowding in Popular Areas:**

At peak times, taxis can be hard to find in busy locations like bus stations or the city center, leading to long waiting times for passengers.

● **Maintenance and Vehicule Quality:**

Some taxis may not be well-maintained, which could lead to **breakdowns** or safety concerns. Poor vehicle condition is also an issue for comfort and reliability.

● **Limited Coverage in Remote Areas:**

While taxis are available in central parts of Oran, there may be limited availability in suburban or more rural areas, making it difficult for residents in these areas to find taxis.

● **Unlicensed Drivers and Informal Taxis:**

Unlicensed drivers operating without proper authorization could pose risks, including unregulated fares and less trustworthy service.

- **Traffic Congestion:**

    In major parts of Oran, **traffic congestion** can significantly slow down taxi rides, increasing travel times and fares, especially during rush hours.

- **Language Barrier:**

    For foreign tourists or non-Arabic/French speakers, communication with taxi drivers can sometimes be challenging if the driver doesn't speak English or another common language.

- **Customer Service Issues:**

    Some passengers might experience **rude or unprofessional behavior** from drivers, especially in high-demand situations, leading to a negative experience.

Airport:

- Oran Ahmed Ben Bella International Airport (IATA code: ORN, ICAO code: DAOO), formerly known as Oran Es Sénia Airport, is located in the commune of Es Sénia, approximately 12 kilometers south of Oran.

- **Infrastructure:**

  - **Runways:**

    The airport features two asphalt-concrete runways, one measuring 3,600 meters and the other 3,000 meters in length.

- **Terminals :**

  - **Terminal 1:**

    Inaugurated on June 23, 2022, this terminal serves international flights. Covering an area of 41,000 m², it has an initial capacity of 3.5 million passengers per year, which can be expanded to 6 million. The terminal is equipped with six jet bridges and relies on photovoltaic panels to meet its energy needs.

  - **Terminal 2:**

    Dedicated to domestic flights, this terminal has a capacity of 900,000 passengers per year. Since January 22, 2023, all national flights have been operated from this terminal.

Some problems that ORAN airport has:

- **Maintenance**

  There is no qualified team available to handle maintenance, and we continuously rely on foreign expertise.

- **Poor Organization**

  The organization is highly inefficient, leading to flight delays, cancellations, and numerous other issues.

- **Lack of Certain Routes**

  The absence of specific domestic and international routes creates significant challenges in passenger transportation.

Bus:

- The bus network in the Oran province comprises 42 lines, spanning a total distance of 175 kilometers. These routes serve the city of Oran and its surrounding major localities, providing convenient transportation for residents and visitors alike.

- Ticket prices range from 20 dinars for short trips to 30 dinars for longer journeys. The Enterprise of Transport of Oran (ETO) currently operates 31 buses, which is insufficient to cover all routes across the province, especially in newly developed residential areas such as Belgaïd and Tlélat.

- To address this shortfall, the ETO plans to acquire 40 new buses, aiming to establish additional routes and strengthen existing ones.

- Moreover, the province of Oran hosts 2,093 transportation operators, managing a fleet of 3,661.

Potential problems with Buses in Oran:

- **Limited Late-Night Service:**

    Most buses stop running at 18h30.

- **The condition of the buses:**

    Most buses are very old and have many breakdowns.

- **Bus Availability:**

    Some bus routes do not have a sufficient number of buses, which causes several issues such as overcrowding, congestion, and long waiting times for passengers to catch a bus.

- **Waiting Time:**

    When waiting for a bus, you have no information about its location or how long it will take to arrive.

- **Bus Stops:**

    At most bus stops, there are no signs or markers indicating their exact location. As a result, if you are unfamiliar with the area, it can be challenging to find the stop

Issues Related to Private Vehicles :

● **High Number of private vehicules**

   Which leads to several problems like : chaotic parking , accidents , high traffic ...

● **Traffic Light Problems:**

   Traffic lights are essential for managing vehicle flow, but several issues persist in Oran:
   Malfunctioning Lights , Lack of Smart Sensors , Poor Visibility , Driver Behavior , No Priority for Emergency Vehicles ...

● **Unfinished Roadworks:**

   Abandoned Construction Sites , Poor Temporary Signage , Delayed Completion ...

● **Traffic Accidents:**

   High-Risk Intersections , Speeding & Aggressive Driving , No Protection for Vulnerable Users (like cyclists ...)

●

Participants Must :

- Propose a solution for transportation in Oran city integrating smart city technologies (IOT).

- Propose a solution to this problem and present it in the form of a written document, presentation or video. (Extra points for two or all of them).

We will take on consideration:

- The feasibility of the idea.

- The Presentation Structure.

Remark :

For documents copy paste from the internet or AI genration or any sort of plagia you will be disqualified from the first challenge.

" Good luck "