

AI(MSE1) PROJECT

TOPIC-Traffic Light Control System

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Introduction

Traffic data analysis is crucial for understanding website engagement, user behaviour, and trends in visitor activity. This report examines traffic data based on parameters such as PageViews, Unique Visits, and Bounce Rate. The insights derived help in optimizing website performance and user experience.

Methodology

The methodology for this analysis is as follows:

1. Traffic Light Simulation Setup:

- A Python script was developed to simulate a traffic light system.
- The script uses a loop to cycle through three traffic light states: Red, Green, and Yellow.

2. Implementation Details:

- The traffic light follows a sequence:
 - Red light stays on for 5 seconds.
 - Green light stays on for 5 seconds.
 - Yellow light stays on for 2 seconds.
- The `time.sleep()` function is used to introduce delays between transitions.

3. Continuous Execution:

- The program runs indefinitely to simulate a real traffic light.
- A try-except block is implemented to allow safe termination using `KeyboardInterrupt`.

4. Code Testing:

- The script was tested to ensure correct timing and transitions.
- The system output was observed to verify accurate light changes.

Code Typed

```
import time

def change_light():
    lights = ["Red", "Green", "Yellow"]
    delays = [5, 5, 2] # Red: 5s, Green: 5s, Yellow: 2s

    while True:
        try:
            for i in range(3):
                print(f"Light: {lights[i]}")
                time.sleep(delays[i])
        except KeyboardInterrupt:
            print("\nExiting Traffic Light Simulation...")
            break # Clean exit

if __name__ == "__main__":
    change_light()
```

Screenshots Output photo pasted



```
import time

def change_light():
    lights = ["Red", "Green", "Yellow"]
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    while True:
        try:
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            break # Clean exit

if __name__ == "__main__":
    change_light()
```



```
Light: Red
Light: Green
Light: Yellow
Light: Red
Light: Green
Light: Yellow
Light: Red
Light: Green

Exiting Traffic Light Simulation...
```