Clearing Roadblocks

Automating Washington Department of Transportation (WDOT) Travel Alerts with Data Engineering

The objective of this project is to use highway and travel information from the state of Washington to create a dashboard of highway alerts, weather information and travel times. This dashboard will connect to a mysql database. The mysql database connects to the Department of Transportation's information via rest API and can be used to help end users make travel plans in Washington State.

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Class	Practical Data Engineering (ADS-507-02)
Professor	Dillon Orr

Assets

Data Source:	https://wsdot.wa.gov/traffic/api/
Github:	https://github.com/junclemente/ads507-finalproject
Database:	ads507-finalproject.mysql.database.azure.com
Dashboard:	https://public.tableau.com/views/WeatherTrafficTravelWashingtonsRoadTrends_17402873591060/Dashboard4?:language=en-US&:
Data Dictionary	Data dictionary for tables within the API RAW database.
Architecture	See EER diagram & ELT. Additionally see LucidChart for ELT diagram.
Monitoring	All scripts for purposes of monitoring are available to the Monitoring tab. This monitors if API is successful as well as if transformations were successful.
Code Review	Log of all code reviews conducted in process to track quality assurance.

Future Considerations & System Gaps

Dashboard Deployment:
The current Tableau dashboard serves as a prototype. A production deployment would require either a Tableau Professional account or a custom-built web application for greater flexibility and control.

Monitoring & Alerts:
The system could benefit from automated email notifications during the ELT process. This would enable faster response times to failures and minimize dashboard downtime.

Pipeline Extensibility:
The current pipeline is easily adaptable to new data sources without major modifications. However, structural changes to the existing API or new data fields would require minor adjustments at the transformation stage.

Security Considerations:
A public read-only access account allows Tableau to extract data and provides controlled access to certain users.
Write/modification access is secured via user authentication.
For large-scale deployment, SSL encryption and restricted IP access should be considered to enhance security.

Database Optimization:
The current MySQL database is semi-relational, primarily linking data through shared road attributes. Future iterations could benefit from better normalization to strengthen relationships and improve query efficiency.

Scalability & Storage Costs:
The pipeline is currently designed to handle increasing data volume, but storage costs must be evaluated as historical data grows. Future iterations may consider partitioning or archiving strategies to manage long-term data storage efficiently.

Access Public Database

Access to the read-only database is available using the following credentials/information:	
URL/Host	ads507-finalproject.mysql.database.azure.com
Port	3306
Database	api_fetch_raw
Username	public
Password	public

References

- Washington State Department of Transportation (n.d). *Traveler Information API*. Retrieved from https://wsdot.wa.gov/traffic/api/
- Microsoft (n.d.) *Azure*. Retrieved from https://azure.microsoft.com/en-us/
- Reis, J., & Housley, M. (2022). *Fundamentals of data engineering.* O'Reilly Media
- Beaulie, A. (2020). *Learning SQL*. O'Reilly Media.

Washington State Department of Transportation

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Data Dictionary

This data dictionary provides you every table found in the api_fetch_raw database. You will find refresh frequencies, data sources, column names, data types and a general explanation for the column data.

Table name	Table description [1]	Table owner	Data Source [2]	Refresh frequency [3]	Column_name	Column_description [4]	Type	Max Length [5]	Is Nullable [6]	Column Key [7]	Notes
api_fetch	This table contains the data of the latest API extraction results. It is updated during each successful extraction, ensuring consistency and usability in reporting and monitoring.	Jun Clemente	Python Script	Every 4 Hours	my_row_id	Key	bigint		N	Primary	auto_increment INVISIBLE
					timestamp	Date and time when the API data was extracted	datetime		Y		
					travel_times_response	HTTP status code received from the Travel Times API during extraction	bigint		Y		
					traffic_alerts_response	HTTP status code received from the Traffic Alerts API during extraction	bigint		Y		
					weather_alerts_response	HTTP status code received from the Weather Alerts API during extraction	bigint		Y		
					status	Overall result of the API extraction process, indicating 'Success' or 'Failed'	text		Y		
api_fetch_hist	This table contains historical API extraction results, capturing each extraction event for auditability and trend analysis. Each API extraction is appended to this table, ensuring a comprehensive record of past extractions.	Jun Clemente	Python Script	Every 4 Hours	id	Key	bigint		N	Primary	auto_increment
					timestamp	Date and time when the API data was extracted	datetime		Y		
					travel_times_response	HTTP status code received from the Travel Times API during extraction	bigint		Y		
					traffic_alerts_response	HTTP status code received from the Traffic Alerts API during extraction	bigint		Y		
					weather_alerts_response	HTTP status code received from the Weather Alerts API during extraction	bigint		Y		
					status	Overall result of the API extraction process, indicating 'Success' or 'Failed'	varchar	20	Y		
application_logs	This table contains structured logging data from the script. It records all logging actions, capturing timestamps, log levels, and messages for monitoring, debugging, and audit purposes.	Jun Clemente	Python Script	Every 4 Hours	id	Primary Key	int		N	Primary	auto_increment
					log_timestamp	Current time of logging action	datetime		Y		default generated
					log_level	Level info: "INFO", "ERROR", "WARNING"	varchar	20	Y		
					log_message	Log message	text	65535	Y		
monitoring_mismatched_log	This table logs the status of data refresh processes, tracking the last refresh timestamp, success/failure status, and any errors encountered during the update process.	Amayrani		Manual	id	Primary Key (auto-incremented)	int		N	Primary	auto_increment
					table_name	Name of the table being monitored	varchar	50	N		
					mismatched_records	Number of records with inconsistencies	int		N		
monitoring_refresh_log	This table logs discrepancies between expected and actual data values, such as differences in API responses, missing records, or inconsistencies between datasets.	Amayrani		Manual	id	Primary Key (auto-incremented)	in		N	Primary	auto_increment
					table_name	Name of the table being monitored	varchar	50	N		
					last_refresh	Timestamp of the last successful data refresh	datetime		N		
					last_updated	Timestamp of the last detected update	datetime		N		
					days_difference	Number of days since the last successful update	int		N		
road_lookup	Table is designed to be a crosswalk to standardize the way that road names appear across the dim tables. Maintained and added to internally.	Sasha Libolt	Internally Maintained	N/A, manually maintained	raw_road_name	Raw road name as it appears in the source data, including variations (e.g., 'S', 005', 1-5'). This column captures all unique representations before standardization.	varchar	50	N	Primary	
					road_key		varchar	20	N		
time_travel_dim	This dimension table contains cleaned, standardized, and enriched data from the time_travel_raw table. It is structured for analytical use, ensuring consistency and usability in reporting and modeling.	Sasha Libolt	time_travel_raw	Every 4 Hrs	tt_id	sourced from _raw, 'traveltimeid'	int		NO	Primary	
					avg_time	sourced from _raw, 'averagetime"	int		YES		
					cur_time	sourced from _raw, 'currenttime"	int		YES		
					distance	sourced form _raw 'distance'	float		YES		
					end_lat	latitude of where route ends	float		YES		
					end_long	longititude where route ends	float		YES		
					end_loc_key	hashcode of ending latitude and logitude	varchar	45	YES		
					end_mp	mile marker of end point	float		YES		
					end_road_key	standardized name of ending road	varchar	45	YES		
					end_direction	Cardinal direction of end point	varchar	45	YES		
					start_lat	latitude of where route starts	float		YES		
					start_long	longititude where route starts	float		YES		
					start_loc_key	hashcode of starting latitude and logitude	varchar	45	YES		
					start_mp	mile marker of start point	float		YES		
					start_road_key	standardized name of starting road	varchar	45	YES		
					start_direction	Cardinal direction of start point	varchar	45	YES		
					alert_time	UTC timestamp when alert was created by WDOT	datetime		YES		
					updated	UTC timestamp when the _raw table was refreshed	datetime		YES		
					last_refresh	Local (PST) timestamp when the _dim table was refreshed	datetime		YES		
time_travel_hist	This table contains historical data extracted from the Travel Times API. Each API extraction appends new records to this table, ensuring a comprehensive log of travel time estimates for trend analysis and reporting.	Jun Clemente	Travel Times API	Every 4 Hours	my_row_id	Key	bigint		N	Primary	auto_increment INVISIBLE
					AverageTime	The average time in minutes that it takes to complete this route.	bigint		Y		
					CurrentTime	The current estimated time in minutes that it takes to complete this route.	bigint		Y		
					Description	A description for the route.	text	65,535	Y		
					Distance	Total distance of this route in miles.	double		Y		
					EndPoint	The location where this route ends.	text	65,535	Y		
					Name	A friendly name for the route.	text	65,535	Y		
					StartPoint	The location where this route begins.	text	65,535	Y		
					TimeUpdated	The last time that the data for this route was updated.	text	65,535	Y		
					TravelTimeID	Unique ID that is specific to a route.	bigint		Y		
					timestamp	Date and time when the API data was extracted	datetime		Y		
time_travel_raw	This table contains the latest data extracted from the Travel Times API. Each successful extraction replaces the existing data, ensuring the most up-to-date travel time estimates for real-time analysis and reporting.	Jun Clemente	Travel Times API	Every 4 Hours	my_row_id	Key	bigint		N	Primary	auto_increment INVISIBLE
					AverageTime	The average time in minutes that it takes to complete this route.	bigint		Y		
					CurrentTime	The current estimated time in minutes that it takes to complete this route.	bigint		Y		
					Description	A description for the route.	text	65,535	Y		
					Distance	Total distance of this route in miles.	double		Y		
					EndPoint	The location where this route ends.	text	65,535	Y		
					Name	A friendly name for the route.	text	65,535	Y		
					StartPoint	The location where this route begins.	text	65,535	Y		
					TimeUpdated	The last time that the data for this route was updated.	text	65,535	Y		
					TravelTimeID	Unique ID that is specific to a route.	bigint		Y		
					timestamp	Date and time when the API data was extracted	datetime		Y		
traffic_alerts_dim	This dimension table contains cleaned, standardized, and enriched data from the traffic_alerts_raw table. It is structured for analytical use, ensuring consistency and usability in reporting and modeling.	Sasha Libolt	traffic_alerts_raw	Every 4 Hrs	alertid	sourced from _raw, 'alertid'	int		N	Primary	auto_increment INVISIBLE
					county	sourced from _raw, 'county'	varchar	45	Y		
					end_time	UTC timestamp when alert is estimated to end	datetime		Y		
					end_direction	Cardinal direction of end point	char	1	Y		
					end_lat	latitude of where route ends	decimal		Y		
					end_long	longitude of where road ends	decimal		Y		
					end_loc_key	hashcode fo ending latitude and logitude	varchar	45	Y		
					end_mp	endpoint mile marker	decimal		Y		
					end_road_key	standardized name of endpoint road	varchar	45	Y		
					start_time	UTC timestamp of when impact on traffic began	varchar	45	Y		
					start_direction	Cardinal direction of start point	char	1	Y		
					start_lat	latitude of where route starts	decimal		Y		
					start_long	longitude of where road starts	decimal		Y		
					start_loc_key	hashcode fo starting latitude and logitude	varchar	45	Y		
					start_mp	starting point mile marker	decimal		Y		
					start_road_key	standardized name of startpoint road	varchar	45	Y		
					event_cat	type of alert, ex "Collision', 'Maintence'	varchar	255	Y		
					event_stat	status of alert, 'open' vs 'closed'	varchar	45	Y		
					event_desc	additional information about the alert	longtext	4294967295	Y		
					priority	Expected impact on traffic (High, Medium, Low)	varchar	45	Y		
					region	sourced from _raw 'region'	varchar	45	Y		
					updated	UTC timestamp when _raw was updated	datetime		Y		
					last_refresh	Local (PST) timestamp when _dim was updated	datetime		Y		
traffic_alerts_hist	This table contains historical data extracted from the Highway Alerts API. Each API extraction appends new records to this table, preserving a detailed history of highway alerts for trend analysis and reporting.	Jun Clemente	Highway Alerts API	Every 4 Hours	my_row_id	Key	bigint		N	Primary	auto_increment INVISIBLE
					AlertID	Unique Identifier for the alert.	bigint		Y		
					County	Used for countywide alerts, name of the affected county.	text	65535	Y		
					EndRoadwayLocation	End locaiton for thealert on the roadway.	text	65535	Y		
					EndTime	Estimated end time for alert.	text	65535	Y		
					EventCategory	Categorization of alert, i.e. Collision, Maintenance, etc.	text	65535	Y		
					EventStatus	Current status of alert, open, closed.	text	65535	Y		
					ExtendedDescription	Optional - Additional information about the alert, used for relatying useful extra information for an alert.	text	65535	Y		
					HeadlineDescription	Information about what the alert has been issued for.	text	65535	Y		
					LastUpdatedTime	When was alert was last changed.	text	65535	Y		
					Priority	Expected impact on traffic highest, high, medium, low.	text	65535	Y		
					Region	WSDOT Region which entered the alert, valid values: EA - Eastern, NC - North Central, NW - Northwest, OL - Olympic, SC - South Central, SW - Southwest.	text	65535	Y		
					StartRoadwayLocation	Start location for the alert on the roadway.	text	65535	Y		
					StartTime	When the impact on traffic began.	text	65535	Y		
					timestamp	Date and time when the API data was extracted	datetime		Y		
traffic_alerts_raw	This table contains the latest data extracted from the Highway Alerts API. Each successful extraction replaces the existing data, ensuring the most up-to-date highway alerts for real-time monitoring and analysis.	Jun Clemente	Highway Alerts API	Every 4 Hours	my_row_id	Key	bigint		N	Primary	auto_increment INVISIBLE
					AlertID	Unique Identifier for the alert.	bigint		Y		
					County	Used for countywide alerts, name of the affected county.	text	65535	Y		
					EndRoadwayLocation	End locaiton for thealert on the roadway.	text	65535	Y		
					EndTime	Estimated end time for alert.	text	65535	Y		
					EventCategory	Categorization of alert, i.e. Collision, Maintenance, etc.	text	65535	Y		
					EventStatus	Current status of alert, open, closed.	text	65535	Y		
					ExtendedDescription	Optional - Additional information about the alert, used for relatying useful extra information for an alert.	text	65535	Y		
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					LastUpdatedTime	When was alert was last changed.	text	65535	Y		
					Priority	Expected impact on traffic highest, high, medium, low.	text	65535	Y		
					Region	WSDOT Region which entered the alert, valid values: EA - Eastern, NC - North Central, NW - Northwest, OL - Olympic, SC - South Central, SW - Southwest.	text	65535	Y		
					StartRoadwayLocation	Start location for the alert on the roadway.	text	65535	Y		
					StartTime	When the impact on traffic began.	text	65535	Y		
					timestamp	Date and time when the API data was extracted	datetime		Y		
weather_alerts_dim	This dimension table contains cleaned, standardized, and enriched data from the weather_alerts_raw table. It is structured for analytical use, ensuring consistency and usability in reporting and modeling.	Sasha Libolt	weather_alerts_raw	Every 4 Hours	station_id	from _raw 'stationID'	varchar	45	N	Primary	
					barometric_pressure	from _raw 'barometricpressure"	float		Y		
					latitude	from_raw 'latitude'	float		Y		
					longitude	from_raw'longitude'	float		Y		
					loc_key	geohash key for latitude and longitude	varchar		Y		
					percipitation	Percipitation in inches, 'UNKNOWN' if null	varchar		Y		
					reading_time	UTC timestamp when weather reading occured	datetime		Y		
					humidity	_raw 'relativehumidity'	float		Y		
					sky_coverage	from _raw 'skycoverage'	varchar	45	Y		
					raw_roadname	roadname extracted from _raw 'stationaname' before standardization	varchar	45	Y		
					road_key	standard roadname of weather alert	varchar	45	Y		
					mp	mile marker of weather station	varchar	45	Y		
					temp	temperature of weather alert	float		Y		
					visibility	visibility in miles	float		Y		
					wind_direction	Cardinal direction of wind	varchar	45	Y		
					wind_gust_speed	wind gust speed in miles	float		Y		
					avg_wind_speed	average wind speed in miles	float		Y		
					updated	UTC timestamp when _raw updated	datetime		Y		
					last_refresh	Current (PST) timestamp when _dim updated	dateime		Y		
weather_alerts_hist	This table contains historical data extracted from the Weather Info API. Each API extraction appends new records to this table, preserving a detailed history of weather conditions for trend analysis and reporting.	Jun Clemente	Weather Alerts API	Every 4 Hours	my_row_id	Key	bigint		N	Primary	auto_increment INVISIBLE
					BarometricPressure	Atmospheric pressure at the weather station, measured in millibars	double		Y		
					Latitude	Geographic latitude of weather station	double		Y		
					Longitude	Geographic longitude of weather station	double		Y		
					PrecipitationInInches	Amount of precipitation measured at the weather station, measured in inches	text	65535	Y		
					ReadingTime	Date and time when weather was recorded	text	65535	Y		
					RelativeHumidity	Percentage of moisture in the air when data was recorded	double		Y		
					SkyCoverage	Description of the extent of sky covered by clouds	text	65535	Y		
					StationID	Unique Identifier assigned to the weather station	bigint		Y		
					StationName	Common name of the weather station	text	65535	Y		
					TemperatureInFahrenheit	Air temperature at the station, measured in degrees Fahrenheit	double		Y		
					Visibility	Distance one can see from the station, measured in meters	double		Y		
					WindDirection	Direction from which the wind is blowing, measured in degrees	double		Y		
					WindDirectionCardinal	Cardinal wind direction (N, NE, E, S) from which the wind is blowing	text	65535	Y		
					WindGustSpeedInMPH	Speed of wind gusts at the station, measured in MPH	double		Y		
					WindSpeedInMPH	Sustained wind speed at the station, measured in MPH	double		Y		
					timestamp	Date and time when the API data was extracted	datetime		Y		
weather_alerts_raw	This table contains the latest data extracted from the Weather Info API. Each successful extraction replaces the existing data, ensuring the most up-to-date weather conditions for real-time monitoring and analysis.	Jun Clemente	Weather Alerts API	Every 4 Hours	my_row_id	Key	bigint		N	Primary	auto_increment INVISIBLE
					BarometricPressure	Atmospheric pressure at the weather station, measured in millibars	double		Y		
					Latitude	Geographic latitude of weather station	double		Y		
					Longitude	Geographic longitude of weather station	double		Y		
					PrecipitationInInches	Amount of precipitation measured at the weather station, measured in inches	text	65535	Y		
					ReadingTime	Date and time when weather was recorded	text	65535	Y		
					RelativeHumidity	Percentage of moisture in the air when data was recorded	double		Y		
					SkyCoverage	Description of the extent of sky covered by clouds	text	65535	Y		
					StationID	Unique Identifier assigned to the weather station	bigint		Y		
					StationName	Common name of the weather station	text	65535	Y		
					TemperatureInFahrenheit	Air temperature at the station, measured in degrees Fahrenheit	double		Y		
					Visibility	Distance one can see from the station, measured in meters	double		Y		
					WindDirection	Direction from which the wind is blowing, measured in degrees	double		Y		
					WindDirectionCardinal	Cardinal wind direction (N, NE, E, S) from which the wind is blowing	text	65535	Y		
					WindGustSpeedInMPH	Speed of wind gusts at the station, measured in MPH	double		Y		
					WindSpeedInMPH	Sustained wind speed at the station, measured in MPH	double		Y		
					timestamp	Date and time when the API data was extracted	datetime		Y		

Weather, Traffic & Travel: Washington's Road Trends

This dashboard provides real-time insights into Washington's traffic conditions, including accident reports, weather impact on road incidents, and travel times.

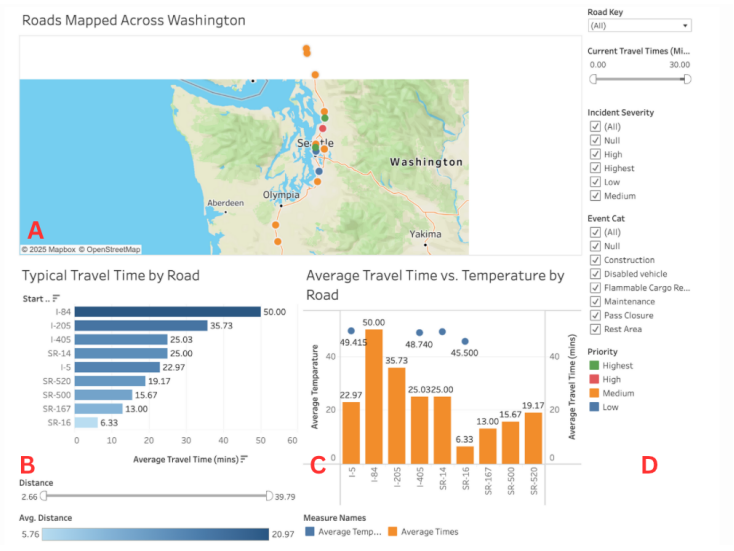
Dashboard Link	https://public.tableau.com/views/WeatherTrafficTravelWashingtonsRoadTrends_17402873591060/Dashboard4?:language=en-US&:sid=&:
Refresh Schedule	Extracted Data

Data Sources	Washington State DOT APIs (Traffic, Weather, Alerts)

Report Tabs [8]

Traffic Incidents	Displays real-time accident locations & severity, with details on road closures and construction.
Travel Time Analysis	Shows average travel times for major highways, helping users compare congestion levels.
Filters & Comparisons	Allows users to filter data by road name, incident severity, travel time, and event type (e.g., construction, maintenance, disabled vehicles).
Average Travel Time vs.	Compares travel time with temperature to identify how weather affects road congestion.

Dashboard Guide [9]



Dashboard Guide		
Label	**Section Name**	**Descriptions**
A	Traffic Incidents Map	Displays real-time traffic incidents across Washington, color-coded by severity.
B	Travel Time by Road	Shows average travel times for major highways, helping users compare road congestion.
C	Travel Time vs. Temperature	Compares travel times with average temperature to see how weather impacts road conditions.
D	Filters Panel	Allows users to filter data by road name, travel time, incident severity, and event type (e.g., construction, closures, disabled vehicles).

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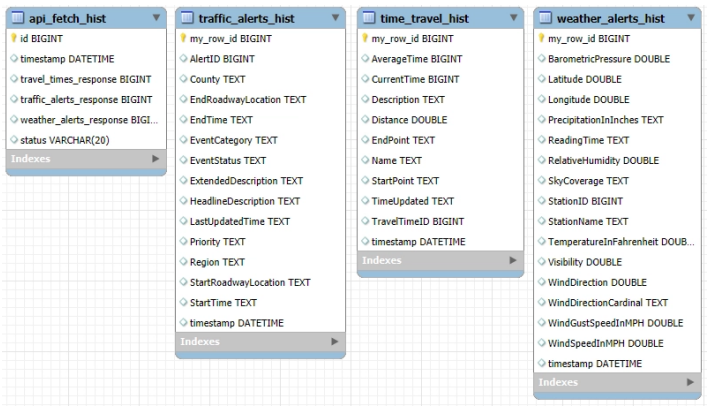
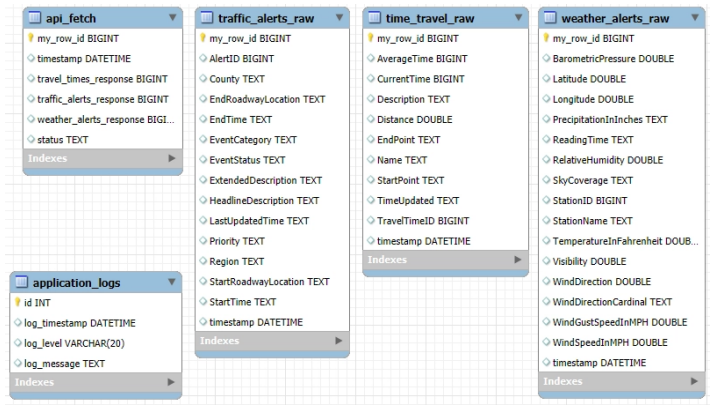
Data Base Diagram

Export of an EER diagram from mySQL.

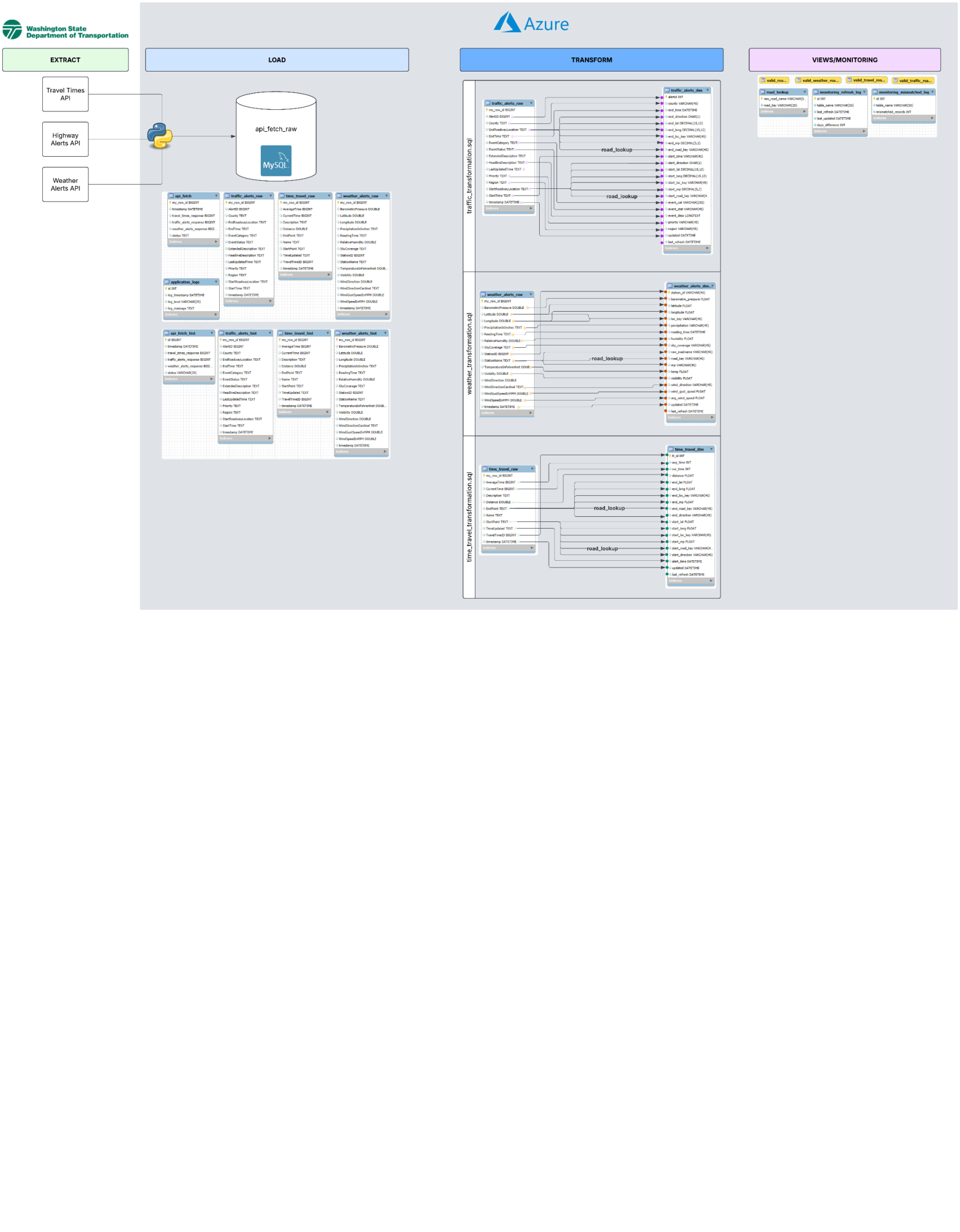




ELT

Data is extracted from the Washington State Department of Transportation (WDOT) via API using python. It is stored in an Azure server and loaded into a mySQL database. Transformations are applied using stored procedures in mySQL. These are automatically called when data is loaded into the database. Currently refreshes every 4 hours.
You can also see a better visual of our ELT architecture via Lucid Chart. Found here:

https://lucid.app/lucidchart/0fcbe2aa-f9f8-4e69-bb6f-91f6d21c950f/edit?viewport_loc=-1196%2C-190%2C3326%2C1724%2C0_0&invitationId=inv_fb0441ac-501a-46cc-a660-7cfd62fa7327



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Monitoring Reports

Scripts and reports created to monitor the ELT process

Report Name	Report Description [10]	Report Owner	Report Audience	Report Output	Refresh frequency [11]
application_logs	This table logs the execution of an ETL pipeline, capturing timestamps, log levels, and detailed messages related to data extraction, database operations, and transformation steps.	Jun	administration	The report provides a structured overview of the ETL process, confirming successful data fetches, database updates, and transformations, ensuring traceability and monitoring of pipeline execution.	Every 4 Hours
api_fetch_hist	This table logs API response statuses for travel times, traffic alerts, and weather alerts, capturing timestamps, HTTP response codes, and an overall success status for each request.	Jun	administration	The report provides a summary of API health, confirming successful data retrieval with HTTP 200 responses, allowing for monitoring of API reliability and potential failures.	Every 4 Hours
api_fetch	This table logs a single record of API response statuses for travel times, traffic alerts, and weather alerts, capturing the timestamp, HTTP response codes, and overall success status for the request.	Jun	administration	The report confirms that the most recent API call was successful, with all response codes returning 200, indicating that data was retrieved without errors.	Every 4 Hours
monitoring_refresh	This table logs the status of data refresh processes, tracking the last refresh timestamp, success/failure status, and any errors encountered during the update process.	Amayrani	administration	The report provides insights into the freshness of data, ensuring data pipelines are running as expected and highlighting any potential delays or failures in scheduled updates.	Manual
monitoring_mismatched	This table logs discrepancies between expected and actual data values, such as differences in API responses, missing records, or inconsistencies between datasets.	Amayrani	administration	The report highlights data inconsistencies, flagging mismatches that may require further investigation, reducing the risk of reporting errors due to inaccurate or incomplete data.	Manual

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Code Review Log

Log of code reviews to take place.
- **OWNER**: who wrote original script.

- **ACTION** :
 - - REVIEW : Kick back to original writer of code to review. Once addressed and discussed, Action changes to released.
 -- RELEASE: OK for production, no additional action required.

- **ADRESSED:**
 -- YES, original owne reviewed comments and took action
 -- NO, not reviewed yet
 -- N/A, not required

File Name	Language [12]	Owner	Reviewed By	Review Date	Action	Addressed	Review Comments	Addressed Date	Addressed By	Addressed Comments
valid_road_views.sql	SQL	Amayrani	Sasha	2/18/25	Release	Yes	There is both null or UNKNOWN to consider,	2/21/25	Amayrani	Fixed it so that views do not pull in both
monitoring_refresh.sql	SQL	Amayrani	Sasha	2/18/25	Release	Yes	Jun Clemente already has the call transformations running so should not be part of the script. Additionally, please keep in mind that timestamp on the raw is in unix time. Updated in dim is in UTC, and last refresh is in local (PST) time. Output looks good.	2/21/25	Amayrani	Removed transformations and fixed timestamp mismatches
monitorming_mismatch.sql	SQL	Amayrani	Sasha	2/18/25	Release	Yes	Jun Clemente already has the call transformatios running. I think this shouldn't be part of the monitoring script because it in theory would be looking to see that what Jun did was successful. Additionally, please keep in mind that timestamp on the raw is in unix time. Updated in dim is in UTC, and last refresh is in local (PST) time. Output looks good.	2/21/25	Amayrani	Removed transformations and fixed timestamp mismatches
extract_and_load_mysql.ipynb	SQL, Python	Jun	Sasha	2/18/25	Release	N/A	Tested and working			
timetravel_transformation.sql	SQL	Sasha	Jun	2/21/2025	Release	Yes	time_travel_dim table could result in empty table due to table truncation without checking if time_travel_raw table is populated.	2/22/25	Sasha	Addressed by adding if statement to clear only if there is already data.
traffic_transformation.sql	SQL	Sasha	Jun	2/21/2025	Release	Yes	traffic_alerts_dim table could result in empty table due to table truncation without checking if traffic_alerts_raw table is populated	2/22/25	Sasha	Addressed by adding if statement to clear only if there is already data.
weather_transformation.sql	SQL	Sasha	Jun	2/21/2025	Release	Yes	weather_alerts_dim could result in empty table due to table truncation without checking if weather_alerts_raw table is populated	2/22/25	Sasha	Addressed by adding if statement to clear only if there is already data.