

## Grid Voltage Report – University SWBD

**Voltage as a Service (VAAS)**<sup>TM</sup> is an energy-saving service solution for regulating and optimising the voltage supplied to electrical equipment to the optimal level for efficient operation. The purpose of VAAS is to reduce energy consumption, lower electricity bills, and decrease carbon emissions by ensuring that electrical devices operate at their most efficient voltage level.

### Executive Summary

<b>Objective</b>	Report on Grid Voltage supplied to University Switchboard
<b>Site Location</b>	Site #1030 Regional City, Victoria, Australia
<b>Facility Type</b>	Bottle Shop
<b>Time Period</b>	A 3 month period, from 1 <sup>st</sup> June 2024 through to 28 <sup>th</sup> August 2024

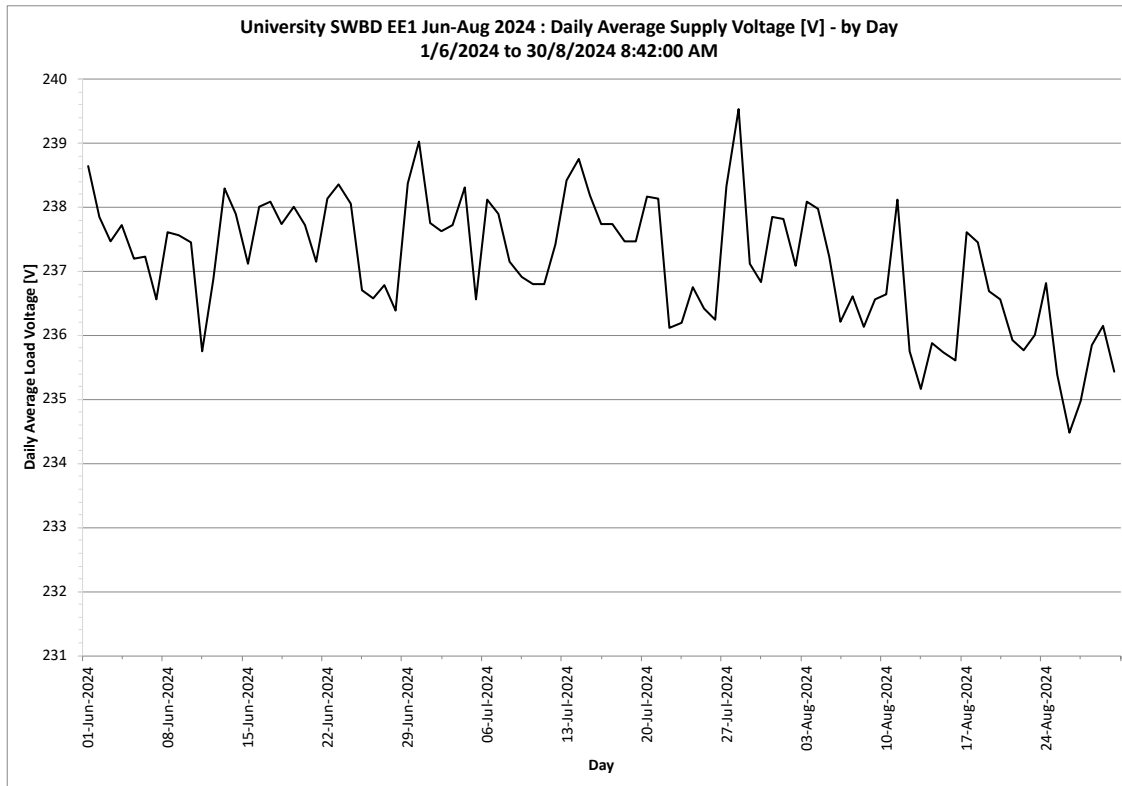
### Methodology

<b>Data Collection</b>	1 phase voltage meter
<b>Communication</b>	4G wireless. 1 minute interval messaging
<b>Sample interval</b>	1 minute interval data
<b>Data storage</b>	iStar Cloud Repository
<b>Accuracy</b>	Class 1 accuracy

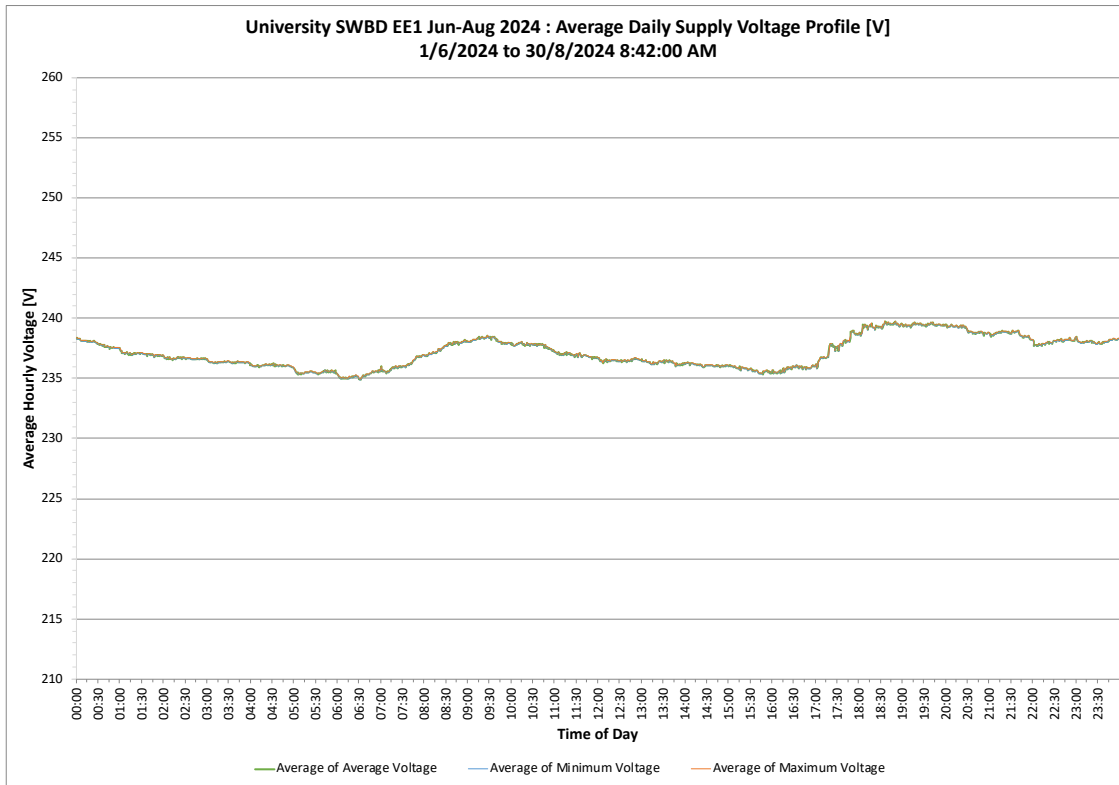
### Summary Statistics

Statistic	Phase 1 Supply Voltage	Average Supply Voltage	Minimum Supply Voltage	Maximum Supply Voltage
Mean	237.13	237.16	237.13	237.20
Median	237.00	237.03	237.00	237.10
Mode	236.70	236.93	236.10	236.70
Minimum	228.60	228.67	228.60	228.70
Maximum	253.20	253.23	253.20	253.30
Range	24.60	24.57	24.60	24.60
Standard Deviation	2.32	2.32	2.32	2.32
Sample Variance	5.39	5.38	5.39	5.38
Kurtosis	0.29	0.29	0.29	0.29
Skewness	0.31	0.31	0.31	0.31
# Samples Read	123,267	123,267	123,267	123,267
Start date	1/6/2024	1/6/2024	1/6/2024	1/6/2024
End date	30/8/2024	30/8/2024	30/8/2024	30/8/2024
Days	90.36	90.36	90.36	90.36

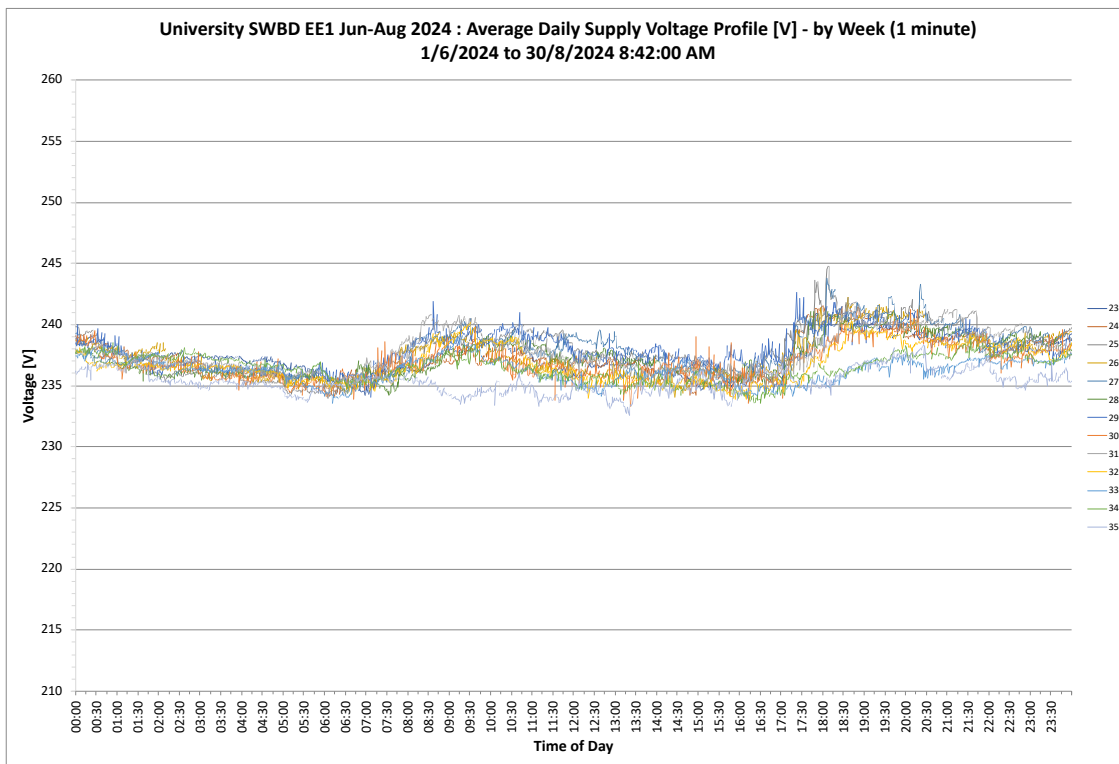
**Figure 1** Average Supply Voltage – 1 minute – Daily Average - 3 month period



**Figure 2** Average Time of Day Supply Voltage – Min, Avg and Max 1 minute average - 8 month period



**Figure 3** Average Time of Day Supply Voltage – Min, Avg and Max 1 minute average – By Day - 8 month period



**Figure 4** Average Time of Day Supply Voltage – 1 minute average – By Day of Week - 8 month period

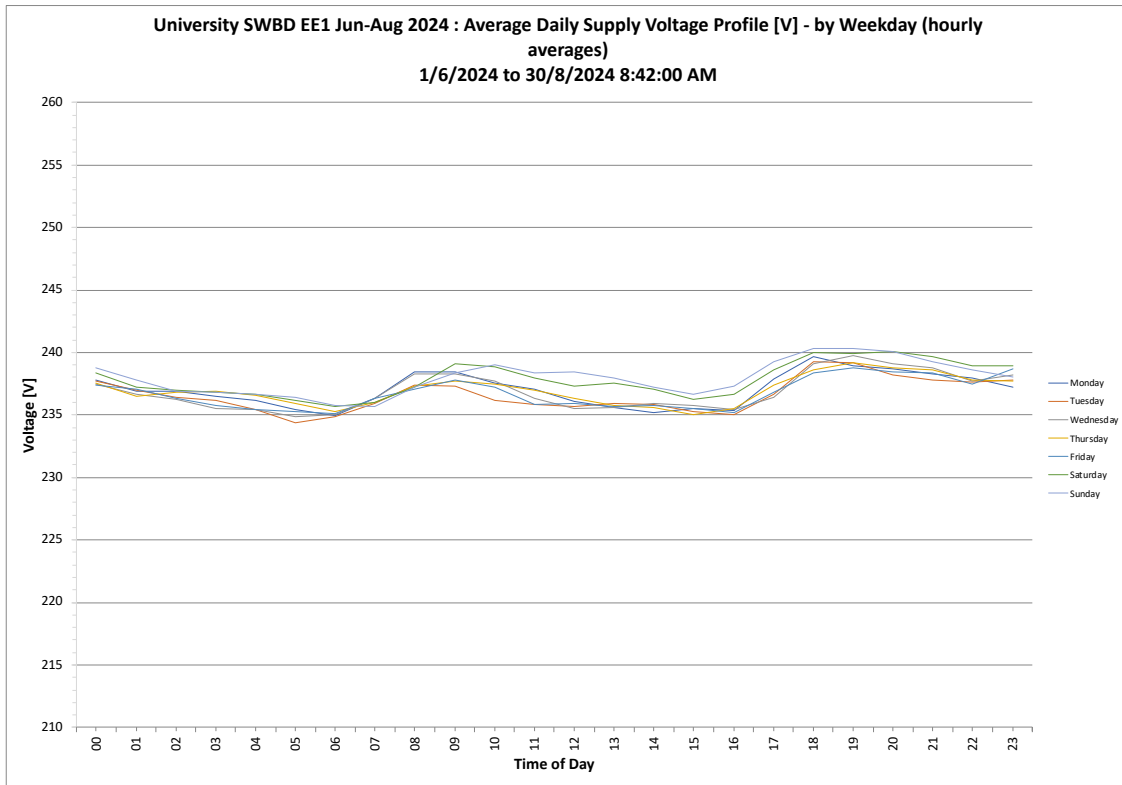


Figure 5 Average Time of Day Supply Voltage – 1 minute average – By week - 8 month period

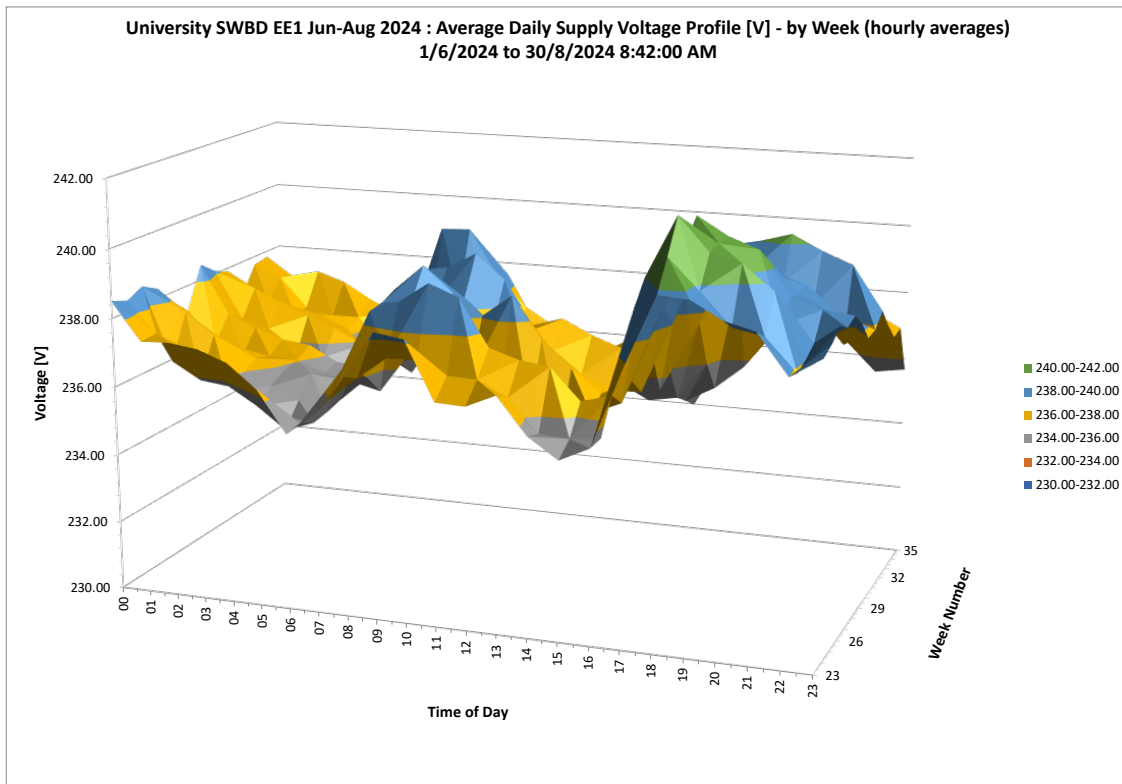


Figure 6 Average Supply Voltage - Histogram – 1 minute average – 8 month period

**VAASCO GROUP**

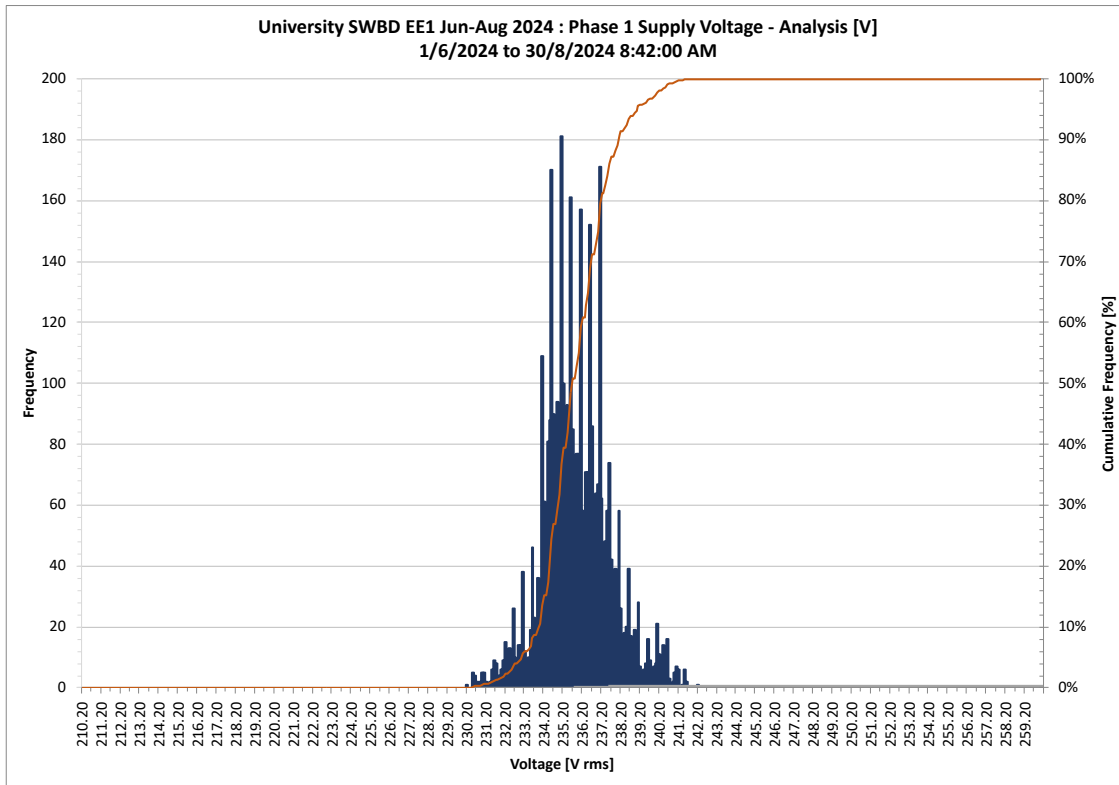
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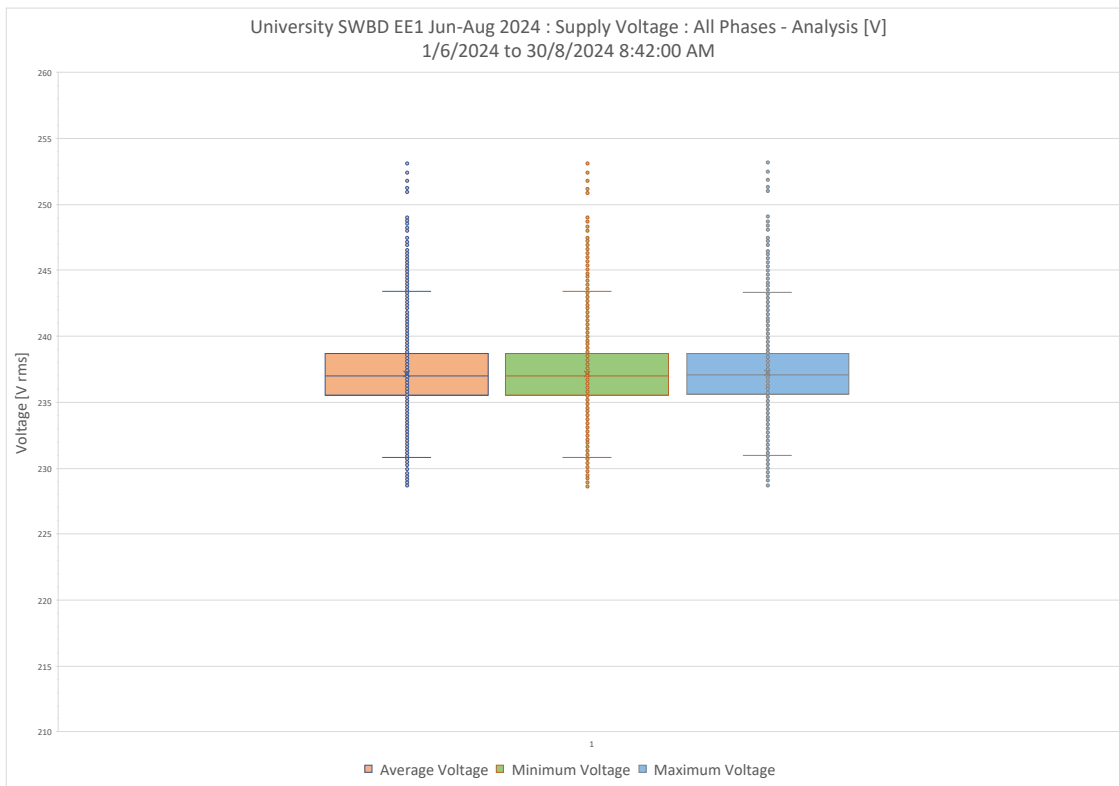
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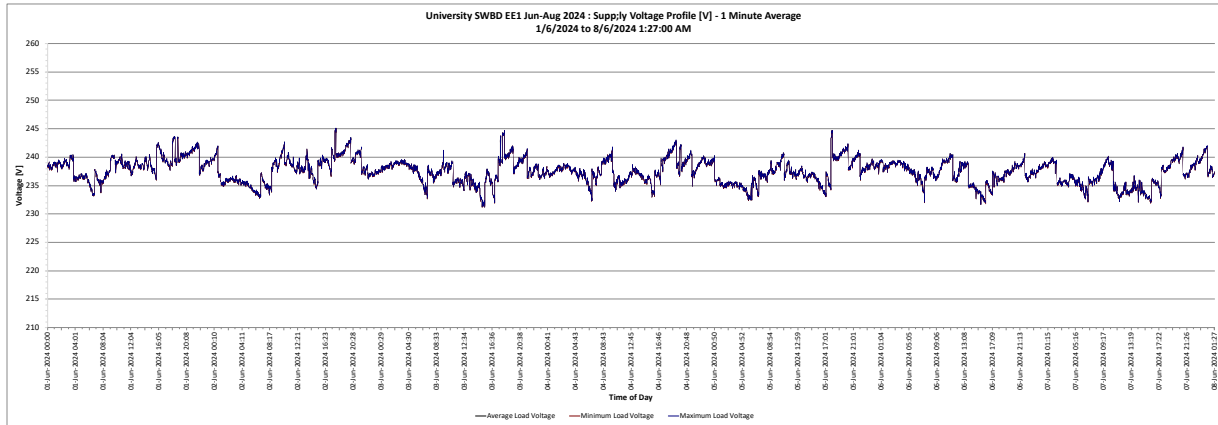
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**Figure 7** Average Supply Voltage - Box Whisker Plot – 1 phase - 1 minute average – 8 month period



**Figure 8** Voltage – Minimum, Average and Maximum 1 minute average over 1 week period



## Conclusion

Voltage Optimisation offers both immediate and long-term financial benefits while aligning with broader strategic goals related to sustainability, operational efficiency, and risk management. These benefits make VO an attractive proposition for businesses looking to reduce energy costs, enhance their environmental credentials, and improve their overall competitiveness.

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