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Analysis Effectiveness of the Internal Control System in Detecting Fraud (Study at PT Arminareka Perdana Group)

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Abstract: This study analyzes the effectiveness of the internal control system in detecting fraud at PT Arminareka Perdana Group. Based on the COSO framework and Social Control Theory, internal control is positioned not only as a governance mechanism but also as a formal social control instrument that shapes ethical behavior and organizational compliance. Using a quantitative approach with PLS-SEM, data were collected from employees involved in financial supervision and operational control. The findings indicate that effective implementation of control environment, risk assessment, control activities, information and communication, and monitoring strengthens fraud detection through structured procedures, segregation of duties, transparent reporting, and continuous evaluation. Internal control contributes to building an accountable organizational culture and supports early identification of irregularities. The novelty of this research lies in integrating COSO-based internal control with Social Control Theory to explain fraud detection from structural and behavioral perspectives, offering strategic insights for strengthening governance and fraud risk management.

Keywords: Internal Control System, Fraud Detection, Social Control Theory, Organizational Governance.

INTRODUCTION

Financial fraud is one of the biggest threats to business continuity and the credibility of a company's financial statements. In recent years, cases of financial fraud in Indonesia have shown a worrying trend. Based on the report by the Association of Certified Fraud Examiners (ACFE) Indonesia Chapter (2023), more than 65% of fraud cases occurring in private companies are caused by weak internal control systems. This shows that the presence of an effective internal control system is not just an administrative formality, but an important instrument in detecting and preventing fraud (Ebaya et al., 2024).

According to (Farah et al., 2024) one of the models widely used to assess the effectiveness of internal control is the COSO framework (Committee of Sponsoring Organizations of the Treadway Commission), which includes five main components: control

environment, risk assessment, control activities, information and communication, and monitoring. (W. Li et al., 2025) According to COSO (2013), a strong internal control system should be able to reduce the likelihood of fraud and enhance early detection of financial discrepancies. However, in practice, the implementation of internal control systems in many companies still encounters various obstacles, such as weak compliance culture, lack of periodic monitoring, and management conflicts of interest (Wijaya et al., 2024) PT Arminaraka Group, as a company operating in the tour and travel industry sector, is also not free from these risks. With a complex organizational structure and a large number of financial transactions, the potential for fraud becomes higher if not supported by an adequate internal control system (J. Li, 2025).

Research by (Dong et al., 2025) shows that companies that consistently implement a risk-based internal control system have lower fraud levels compared to companies that only perform internal control as a formality. Additionally, a study by (Akouhar et al., 2025) found that the effectiveness of internal controls has a significant correlation with the company's ability to detect fraud in financial statements.

Seeing this phenomenon, this study aims to analyze the effectiveness of the internal control system implemented by PT Arminaraka Group in detecting financial fraud. With a focus on the five components of the COSO internal control framework, this research is expected to provide a comprehensive overview of the strengths and weaknesses of the existing system, as well as offer recommendations for its improvement (Martin et al., 2014).

Social Control Theory

The Social Control Theory was developed by Travis Hirschi (1969) in his book Causes of Delinquency, stating that a person tends to commit deviance or violations when their social bonds with norms and institutions weaken. The internal control system within an organization functions not only as a technical tool but also as a form of formal social control that regulates individual behavior through policies, procedures, and reporting systems (Zhang et al., 2024).

The relationship between internal control systems and Social Control Theory:

1. Attachment: SPI builds individual closeness with the values of ethics and organizational culture.
2. Commitment: SPI creates a clear work structure and a reward-punishment system, making employees reluctant to violate it.
3. Involvement: SPI increases employee involvement in systematic procedures, reducing downtime for malicious intent.
4. Belief: SPI strengthens employees' conviction in the importance of integrity and legal compliance.

The Social Control Theory provides an important foundation in understanding how individual behavior can be controlled through existing norms and social structures. According to (Shi et al., 2025) this theory explains that individuals are likely to adhere to rules if they have strong social ties, commitment to legitimate goals, active involvement in positive activities, and belief in the legal and ethical system. In the organizational context, a strong internal control system can serve as a formal social control mechanism that limits individuals' opportunities to engage in deviations, including fraud.

Internal control includes strict rules, procedures, and monitoring systems, thereby providing real limits on deviant actions. When employees feel monitored and are aware of strict sanctions for violations, they will be more cautious in their actions. Additionally, the presence of SPI also creates a transparent and accountable work culture, which can strengthen moral and ethical values within the organization (Cheng et al., 2024)Thus, social control theory emphasizes that fraud prevention is not just about technology or systems, but also about how

organizations shape a social environment that encourages compliance and suppresses potential deviant behavior from the outset.

Internal Control

Internal control is a system developed and implemented by the management of an entity to ensure the achievement of organizational goals effectively, efficiently, and in accordance with applicable regulations (Hassan et al., 2025) This system is designed to provide adequate assurance regarding three main objectives, namely: operational effectiveness and efficiency, reliability of financial reporting, and compliance with regulations and legal provisions. In the context of financial reporting, internal controls ensure that the information presented in financial statements is free from material misstatements, whether caused by errors or fraud.

Through internal control, management can identify and manage risks that may disrupt the achievement of organizational goals. This control includes various policies, procedures, and monitoring mechanisms that regulate work processes, decision-making authority, and reporting lines (Tubishat et al., 2025) (Martin et al., 2014) Important components of this system include the control environment, risk assessment, control activities, information and communication, and monitoring activities. Thus, internal control is not just an administrative tool, but also an integral part of good governance, which supports the creation of transparency, accountability, and the protection of organizational assets and resources from potential misuse.

Fraud

According to (Stradling et al., 2024) Fraud is an intentional act aimed at obtaining unlawful benefits through means that violate applicable laws, ethics, or norms. These actions can take various forms, such as document forgery, asset embezzlement, financial data manipulation, abuse of authority, and financial statement fraud. Fraud is generally carried out in a systematic and hidden manner, making it often difficult to detect without a good monitoring and control system.

In an organizational environment, fraud can damage reputation, cause financial losses, and weaken stakeholders' trust in the institution (Zhang et al., 2024) Therefore, fraud prevention and detection become important priorities in healthy corporate governance. Fraud not only involves violations of formal laws but also constitutes a breach of the principles of integrity, responsibility, and accountability. Fraud prevention requires ethical awareness, a strong organizational culture, and an effective internal control system. By understanding the characteristics and forms of fraud, organizations can build early detection systems and more appropriate prevention policies to maintain their operational integrity and sustainability.

Previous Research

According to (Tubishat et al., 2025) & (Rehman et al., 2025), the research results show that internal control plays an important role in minimizing the occurrence of fraud. A well-designed and consistently implemented internal control system can limit individuals' opportunities to commit fraud. Effective controls include regular inspections, segregation of duties, transaction authorization, and transparent and accountable documentation.

The tighter and more efficient the internal control system within an organization, the less likely fraud will occur because the perpetrators are aware of the inherent supervision and the sanctions that can be applied. This system is also capable of detecting signs of deviations earlier, so corrective actions can be taken promptly before the losses become significant.

Thus, strengthening internal controls not only serves as a preventive tool but also as an educational means that shapes an organizational culture that upholds integrity and compliance. Therefore, organizations with strong internal control systems tend to experience fewer fraud incidents compared to organizations with weak or inconsistent controls.

As for the framework of thinking in this research:

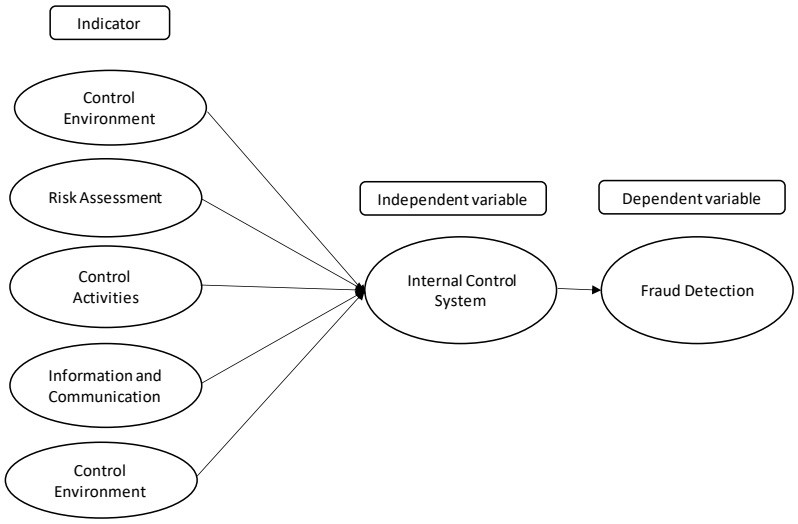


Figure 1. Framework

H_0: Internal control does not have a significant effect on fraud detection.
H_1: Internal control has a significant effect on fraud detection.

METHODS

This research uses a quantitative descriptive method aimed at systematically and measurably describing the effectiveness of the internal control system in detecting and minimizing fraud within PT Arminaraka Group. The quantitative approach allows researchers to collect numerical data through questionnaire instruments, which are then statistically analyzed to observe trends, relationships, and influences between variables.

The subjects of this research are parties directly involved with the operations and internal control system at PT Arminaraka Group, such as staff in the finance and accounting department, internal auditors, operational managers, and members of the audit committee. The respondents were selected based on their involvement in the company's supervision, reporting, and financial control processes, so they are expected to provide accurate and relevant information regarding the implementation of the internal control system and its relation to fraud prevention efforts.

By involving the right subjects and using measurable methods, this research is expected to provide a clear picture of the extent to which the internal control system plays a role in reducing the likelihood of fraud at PT Arminaraka Group. Here are the operational variables as measurement scales.

Table 1. Operational Definition of Variables

Variable	Indicator	Scale
Internal Control System (Dong et al., 2025)	Control Environment Risk Assessment Control Activities Information and Communication	Likert

	Control Environment	
Fraud Detection (W. Li et al., 2025)	Frequency and Types of Fraud Detected Effectiveness of the Reporting System Internal Audit Procedure Employee Knowledge about Fraud	Likert

RESULTS AND DISCUSSION

Company Overview

Founded in 1990 by Drs. H. Gurril Mz and Hj. Corry Mundzakkar, this company is a pioneer in organizing Umrah and plus Hajj pilgrimage trips in Indonesia. With over three decades of experience, this company has served thousands of pilgrims from various regions, making it one of the most trusted and experienced pilgrimage travel organizers. The founders' commitment to trustworthy and professional service is the main foundation of every travel program offered.

As a form of compliance with regulations, this company has officially registered with the Indonesian Muslim Hajj and Umrah Organizers Association (AMPHURI) and obtained official permission from the Indonesian Ministry of Religious Affairs. This legality not only serves as a guaranty of trust for prospective pilgrims but also reflects the company's commitment to always providing services in accordance with the applicable standards and regulations. Thru an approach oriented toward the satisfaction of pilgrims and spiritual values, the company continues to grow as the primary choice in organizing pilgrimages to the holy land.

Description Analysis

Table 2. Descriptive Statistics

Question	Mean	Median	Min	Max	Standard Deviation
P1	4.490	5.000	3.000	5.000	0,40
P2	4.569	5.000	3.000	5.000	0,42
P3	4.598	5.000	3.000	5.000	0,40
P4	4.422	5.000	2.000	5.000	0,54
P5	4.569	5.000	3.000	5.000	0,41
P6	4.422	5.000	2.000	5.000	0,50
P7	4.578	5.000	3.000	5.000	0,39
P8	4.451	4.000	3.000	5.000	0,37
P9	4.480	4.000	3.000	5.000	0,36
P10	4.431	4.000	3.000	5.000	0,40
P11	4.500	5.000	3.000	5.000	0,39
P12	4.510	5.000	2.000	5.000	0,41
P13	4.529	5.000	2.000	5.000	0,41
P14	4.578	5.000	1.000	5.000	0,52
P15	4.520	5.000	3.000	5.000	0,40
P16	4.549	5.000	3.000	5.000	0,43
P17	4.627	5.000	3.000	5.000	0,41
P18	4.608	5.000	3.000	5.000	0,40
P19	4.569	5.000	3.000	5.000	0,40
P20	4.520	5.000	2.000	5.000	0,45
P21	4.618	5.000	2.000	5.000	0,40
P22	4.647	5.000	3.000	5.000	0,38
P23	4.461	4.000	3.000	5.000	0,37
P24	4.539	5.000	1.000	5.000	0,53
P25	4.529	5.000	2.000	5.000	0,54
P26	4.539	5.000	3.000	5.000	0,37
P27	4.510	5.000	3.000	5.000	0,40

P28	4.549	5.000	3.000	5.000	0,41
P29	4.500	5.000	3.000	5.000	0,44
P30	4.578	5.000	2.000	5.000	0,42
P31	4.471	5.000	3.000	5.000	0,41
P32	4.539	5.000	3.000	5.000	0,44
P33	4.598	5.000	3.000	5.000	0,39
P34	4.373	5.000	2.000	5.000	0,55
P35	4.539	5.000	3.000	5.000	0,42
P36	4.373	5.000	2.000	5.000	0,52
P37	4.529	5.000	2.000	5.000	0,44
P38	4.471	4.000	3.000	5.000	0,37
P39	4.461	4.000	3.000	5.000	0,38
P40	4.402	4.000	2.000	5.000	0,43
P41	4.461	5.000	2.000	5.000	0,42
P42	4.461	5.000	2.000	5.000	0,44
Average	4.516	4.833	2.571	5.000	0,43

Based on the results of descriptive statistics, the average (mean) of 4.516 and median of 4.833 indicate that most respondents gave high ratings to the indicators in the study, with a data distribution that tends to be positive and consistent. The minimum value of 2.571 and maximum of 5.000 indicate that although there is variation in the responses, the majority of the data is on the higher scale. The standard deviation (STDV) of 0.43 shows a low level of data dispersion, meaning the respondents' answers are relatively homogeneous. Because the mean and median are relatively close, this indicates that the data tends to be normally distributed, making it valid for further analysis.

Feasibility Study (Outer Model)

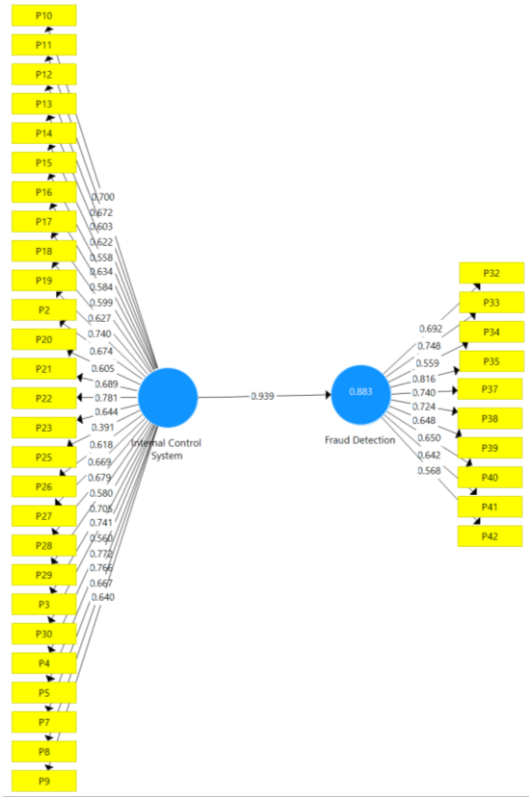


Figure 2. Outer Model

1. Convergent validity

Convergent validity is a type of validity that indicates the extent to which an indicator (or item) that is supposed to measure a certain construct is indeed highly correlated with other indicators measuring the same construct. In other words, convergent validity ensures that various indicators of a single variable are consistently related to each other. A factor loading value is considered good if it is $\geqslant 0.5$, which means that more than 50% of the variance of the indicator can be explained by the construct (Hair et al., 2017). Based on the displayed path coefficient values, all indicators on average have met the established decision-making standards, such as significant loading factor values and adequate validity. This indicates that the model has passed the initial feasibility test, allowing the testing to proceed to the next stage, such as hypothesis testing or structural analysis to examine the relationships between variables in the research model.

2. Discriminant Validity

In the discriminant validity test, it was observed that the square root of the Average Variance Extracted (AVE) value is higher than the correlation value between constructs, indicating that each variable has good discriminant validity (Hair et al., 2017). Thus, this model demonstrates reliability in measuring the intended variables separately and accurately. Here is the table of the discriminant validity test results:

Table 3. Fornell-Larcker Criterion

Variable	Internal Control System	Fraud Detection
Internal Control System	0,954	
Fraud Detection	0,739	0,983

The square root of the Average Variance Extracted (AVE) from the Internal Control System variable is 0.954, while the square root of the AVE from the Fraud Detection variable reaches 0.983. Both values are greater than the correlation value between variables, which is 0.739, indicating that each variable has good discriminant validity. Thus, it can be concluded that each construct in this research model is able to clearly distinguish itself from other constructs, as well as consistently represent its constituent indicators. This indicates that the model used meets the criteria for discriminant validity and can be used for further analysis.

3. Reliability Test

The reliability test aims to measure the consistency or reliability of an instrument in measuring the construct being studied. In quantitative research, reliability is generally tested thru the Composite Reliability (CR) and Cronbach's Alpha values, with a value considered adequate being ≥ 0.7. These values indicate that the indicators within a variable have a high level of internal consistency. If the CR and Cronbach's Alpha values of all constructs exceed the minimum threshold, the instrument is considered reliable and can be used for further testing, such as validity testing and variable relationships in the structural model (Hair et al., 2017). Here is the table of the reliability test results:

Table 4. Construct Reliability and Validity

Variable	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Internal Control System	0,947	0,952	0,952	0,928
Fraud Detection	0,870	0,877	0,896	0,966

Based on the results of the reliability test, it can be seen that the Cronbach's Alpha and Composite Reliability values of all variables in the model are above 0.7. This indicates that each indicator has high internal consistency in measuring its construct. Thus, the instruments used in this study can be declared reliable, making them suitable to proceed to the next stage of analysis, such as validity testing and testing the relationships between variables.

Structural Model (Inner Model)

1. R-square

R-square (R^2) or the coefficient of determination is a measure used in regression models or PLS-SEM to indicate how much the independent variable can explain the dependent variable (Hair et al., 2017).

The R^2 value ranges from 0 to 1, with the following interpretations:

1. $R^2 = 0$: The independent variable does not explain the dependent variable at all.
2. $R^2 = 1$: The independent variable perfectly explains the dependent variable.
3. $R^2 \geqslant 0.75$: Strong category
4. $0.50 \leqslant R^2 < 0.75$: Moderate category
5. $0.25 \leqslant R^2 < 0.50$: Weak category

Table 5. R Square

Variable	R Square	R Square Adjusted
Fraud Detection	0,883	0,881

The R-square result of 0.881 for the Internal Control System variable against Fraud Detection indicates that 88.1% of the variation or change in Fraud Detection can be explained by the Internal Control System variable. This value falls into the very strong category, as it exceeds the threshold of 0.75. This means that the structural model used has a very good predictive ability in explaining the phenomenon being studied, and the Internal Control System variable plays a dominant role in influencing Fraud Detection in the context of this research.

2. F-square

F-square (f^2) or effect size test is an analysis used in the Partial Least Squares (PLS-SEM) model to determine the extent of the influence of an independent variable on the dependent variable in the structural model.

The f^2 value is calculated to see the contribution of each independent variable to the R^2 value of the dependent variable. The general interpretation of the f^2 value is as follows:

1. $f^2 \geq 0.02 \rightarrow$ small effect
2. $f^2 \geq 0.15 \rightarrow$ medium effect
3. $f^2 \geq 0.35 \rightarrow$ large effect

If the f^2 value of a variable is high, then that variable makes a significant contribution to explaining the dependent variable. On the other hand, a very small f^2 value indicates that the influence of that variable is less significant in the model. This test is important for evaluating the relative strength of each path in the model (Hair et al., 2017).

Table 6. F-Square

Variable	Internal Control System	Fraud Detection
Internal Control System		0,522
Fraud Detection		

The f-square value of 0.522 indicates that the Internal Control System has a very large influence on Fraud Detection in this research model. Based on the interpretation guidelines (Cohen, 1988), an f^2 value $\geqslant$ 0.35 is categorized as a large effect, so the value of 0.522 exceeds that threshold. This means that the Internal Control System provides a significant and substantial contribution in explaining the variability of Fraud Detection, and plays an important role in the structure of the analyzed model. Thus, the Internal Control System deserves to be the focus of attention in recommendations or model-based decision-making.

3. Predictive Relevance Test

The Predictive Relevance Test (Q^2) is a method to evaluate the model's ability to predict the indicator values on the endogenous construct (dependent variable). This test is conducted using the blindfolding technique in Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis.

1. $Q^2 > 0$: The model has good predictive ability.
2. $Q^2 \leq 0$: The model does not have predictive ability.

If the Q^2 value of the endogenous construct shows a positive and significant number, it can be concluded that the model is predictively relevant, meaning the model is able to explain data variation well and can be relied upon for further analysis or decision-making.

Table 7. Construct Crossvalidated Redundancy

Variable	SSO	SSE	Q^2 (=1-SSE/SSO)
Internal Control System	2.754,000	2.754,000	
Fraud Detection	1.020,000	639,354	0,373

In the table above, it can be seen that the Q^2 value is 0.373, which means the model has good predictive ability toward the endogenous variable. A Q^2 value greater than 0 indicates that the model can significantly and predictively explain data variation. Thus, the structural model in this study is deemed suitable for predicting relationships between variables and can be relied upon for data-driven decision-making.

Hypothesis Testing

Table 8. Final Result

Variable	Path Coefficients	Original Sample (O)	Sample Mean (M)	STDEV	T Statistics (|O/STDEV|)	P Values
Internal Control System -> Fraud Detection	0,939	0,939	0,945	0,010	93,665	0,000

The final results of the hypothesis testing show that the t-statistic value is 93.665 and the p-value is 0.000, which means the hypothesis is accepted because the t-statistic is far above the critical value (1.96) and the p-value < 0.05. Additionally, the path coefficient value of 0.939 indicates that the influence between the Internal Control System variable and Fraud Detection is very strong and positive. Therefore, it can be concluded that the Internal Control System has a significant and strong impact on reducing or detecting Fraud Detection, and it has a dominant contribution to the structural model of this research. These findings are in line with what was expressed by (Liu & Kong, 2025) (El-tahlawy et al., 2025) that internal control and supervision

play an important role in detecting fraud, as both are capable of creating a transparent, accountable, and structured system. With consistent implementation, the potential for fraud can be minimized early on thru procedures of inspection, monitoring, and evaluation of operational activities. (Musah et al., 2025) also revealed that an effective internal control system functions as an early detection tool for potential fraud. Thru mechanisms such as task separation, authorization, and internal audits, this system is capable of identifying suspicious activities, preventing deviations, and enhancing accountability in every operational process of the organization.

CONCLUSION

Based on the research results, it can be concluded that the Internal Control System has a significant effect on Fraud Detection. This is evidenced by a path coefficient value of 0.939, a t-statistic of 93.665, and a p-value of 0.000, which indicates that the hypothesis is accepted. Additionally, the R-square value of 0.881 indicates that 88.1% of the variation in Fraud Detection can be explained by the Internal Control System. The f-square value of 0.522 also shows that the influence exerted falls into the large category. This proves that internal control has a dominant and substantial contribution in preventing and detecting fraud within the organization.

Thus, the implementation of an effective internal control system is crucial for companies or institutions to maintain integrity, transparency, and accountability in their operations. Measures such as segregation of duties, authorization procedures, and continuous monitoring and evaluation can strengthen the fraud prevention and detection system. This research supports the importance of the role of internal control as a primary instrument in managing increasingly complex fraud risks in the modern era.

Suggestions

Based on the research findings, the researchers provide the following suggestions:

1. Strengthening the Internal Control System: Organizations should continue to strengthen the internal control system thru the enhancement of standard operating procedures (SOPs), clear task separation, and consistent supervision. This aims to minimize the gaps for fraud occurrence and enhance the reliability of the fraud detection system.
2. Employe Training and Education: Regular training on the importance of integrity, work ethics, and understanding of internal control systems is necessary so that all employes have a collective awareness in preventing and detecting potential fraud.
3. Utilization of Technology: It is recommended that organizations utilize information technology, such as digital audit systems or monitoring software, to detect suspicious transactions in real-time and improve efficiency in internal supervision.
4. Periodic Evaluation: Organizations should conduct periodic evaluations and internal audits to identify weaknesses in the existing control systems and implement continuous improvements to create an accountable and fraud-free work environment.

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