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Analysis of The Use of AI in Detecting Managerial Fraud: Systematic Literature Review

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ABSTRACT

This study aims to explore the effectiveness of artificial intelligence (AI) in detecting managerial fraud, a critical issue facing organizations in maintaining integrity and accountability. Using a population of historical and real-time data from multiple companies, the study applies big data analytics and machine learning algorithms to detect patterns of fraud in financial statements and misappropriation of assets that may be missed by traditional methods. The results show that the AI-based system significantly improves the accuracy and efficiency of detecting anomalies, allowing organizations to take preventive actions faster and reducing the cost of investigation and litigation. While this technology is promising, there are ethical and data privacy challenges that require special attention. Overall, this study confirms the important role of AI in strengthening managerial fraud detection amid the increasing complexity of modern business.

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1. INTRODUCTION

In this digital era, accounting processes have been integrated with computer programs for collecting, processing data, and information to decision making (Caseba & Dewayanto, 2024). AI technology brings the potential for fundamental transformation in the world of accounting, allowing companies to improve operational efficiency and data accuracy (Supriadi, 2024). One of the most prominent applications of AI is in detecting managerial fraud (accounting processes and financial statements) (Mawlidy et al., 2024). Fraud refers to illegal activities carried out by someone, either internal or external to the organization to achieve a certain goal, such as obtaining personal or group benefits, which causes losses to other parties. Three types of fraud that appear in business, namely corruption, asset misappropriation, and financial statement fraud (Khomariah & Khomsiyah, 2023). Therefore, efforts to detect and prevent fraud are very important, and this is where AI technology plays its role. According to Putri, (2024) accounting transformation driven by big data and AI brings new hope in detecting fraud, with the ability to analyze large amounts of data quickly and accurately. By leveraging sophisticated algorithms, AI can identify suspicious patterns and provide deeper insights into potential fraud that may occur.

Artificial intelligence, through machine learning and other data analysis techniques, offers a more proactive and adaptive approach to detecting managerial fraud. Mawlidy et al., (2024) explain that the ability of AI in detecting fraud lies in its ability to learn from historical data and adapt its models based on emerging patterns. This is important in a changing world, where fraud methods are also adapting and evolving. In addition, AI can reduce reliance on manual procedures that are often prone to human error. By increasing the efficiency and effectiveness of the audit process, AI technology can help auditors identify anomalies that may indicate fraud, as stated by Okinaldi & Aziza, (2024)

According to Alhaddad, (2018) AI is a collection of new technologies, processes, and approaches that are essential for the growth of our society and economy today and in the future. For millions of people, AI is already embedded in their daily lives. The use of artificial intelligence is seen as a possible catalyst for the growth of disruptive technologies and innovations. However, although AI promises various benefits, its implementation is also not without challenges. One of the main challenges in using AI for fraud detection is the need for high-quality data. Nainggolan, (2024) emphasized that an effective accounting system is highly dependent on the quality of the data inputted into the system. If the data used to train the AI model is inaccurate or unrepresentative, then the analysis results obtained will also be less valid. Therefore, it is important for organizations to ensure that they have a good data collection and processing system before implementing AI technology in their audit process.

The development and use of modern technologies, such as artificial intelligence (AI), have a significant impact on accountants, both in financial reporting and in decision-making. Amelia et al., (2024) The use of this technology allows companies to reduce cost estimates in the recording and reporting process, as well as increase the transparency of reports. Artificial intelligence in accounting can increase efficiency, accelerate historical data analysis, and monitor financial transactions in real time. However, it is important to consider challenges related to ethics, privacy, and other factors.

Another aspect that needs to be considered is the attitude and readiness of human resources in facing this new technology. Anas & Zakir, (2024) Understanding and professional skills in accounting and management towards AI greatly affect the success of its implementation. Without adequate training, staff can feel insecure, reducing the

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effectiveness of the technology. Therefore, continuous human resource development is important to increase the use of AI in detecting fraud.

From an organizational perspective, the adoption of AI technology also has the potential to bring about changes in organizational culture. According to Shamaya et al., (2023) the application of AI in auditing and accounting increases transparency, accountability, and data-driven decision-making, increasing public trust and ethical behavior. However, without good ethics, AI is at risk of being misused for unethical purposes. According to Manel et al., (2023) Many organizations are starting to implement AI in management systems. The use of AI in accounting and finance helps companies formulate better strategies and support management decisions efficiently, improving company performance.

Furthermore, research on the ability of AI to detect fraud is growing. Raihan et al., (2024) found that AI improves the efficiency and effectiveness of financial institution operations, including fraud detection, and reduces operational costs. AI helps companies optimize resources and reduce the risk of fraud. Dewi & Dewayanto, (2024) Artificial intelligence (AI) plays a very important role in detecting financial fraud, with the average strength of each technology showing a significant impact. The future prospects of AI in fraud detection are very bright, with continued progress expected to effectively strengthen cybersecurity measures.

On the other hand, the challenges and opportunities of implementing AI in the audit process also need to be considered. Alqafi & Azizah, (2024) Although AI offers many benefits, there are associated risks such as data security and privacy. With the increasing use of AI, data becomes more vulnerable to cyber threats. Organizations must ensure adequate security measures to protect sensitive data and the privacy of clients and stakeholders. According to Pratama et al., (2023) one of the challenges that arises in integrating AI is that AI requires high-quality data for accurate results. Incomplete or unstructured data can result in unreliable analysis and predictions.

In this context, it is important to understand how AI can be effectively integrated into the audit process to detect fraud. As stated by Febrianto & Fitriana, (2020) Financial statement analysis with the fraud diamond approach helps understand the motives and opportunities for fraud. Combining this approach with AI allows auditors to develop more effective fraud detection strategies. Human and AI collaboration is important to improve detection results. Alhaddad, (2018) the use of artificial intelligence (AI) in finance has increased drastically, along with the increasing amount of available data and the decreasing cost of computing resources.

In addition, the use of AI systems in the banking industry is also a topic that is widely studied. Ramadhani & Trimuliani, (2024) research shows that the implementation of AI in banking increases efficiency and strengthens internal controls to prevent fraud. Global trends show that financial institutions are investing in technology to respond to threats and improve customer service. Raihan et al., (2024) the implementation of Artificial Intelligence (AI) in banking has had a positive impact on financial performance. Before the implementation of AI, banks faced high operational costs due to manual processes, as well as low customer satisfaction and slow service. Revenue from products and services was also stagnant without significant increase.

Thus, the use of AI in managerial fraud detection shows significant potential to improve the effectiveness and efficiency of audit and accounting processes. Although there are challenges to be overcome, such as data quality and human resource readiness, the opportunities offered by this technology are enormous. Organizations that are able to effectively integrate AI into their processes can not only better detect fraud but also

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increase transparency and accountability. Therefore, it is important for organizational leaders to understand and utilize this technology to create a more ethical and responsible environment in managing resources. Thus, AI is not only a tool for detecting fraud but also contributes to the overall transformation of accounting and management practices in this digital era.

2. METHODOLOGY

The method used in this study is the Systematic Literature Review (SLR), in which a number of articles published between 2022 and 2024 are systematically analyzed. In order to uncover more problems pertaining to the application of artificial intelligence in revealing management fraud detection, the literature is categorized according to pertinent principles and organized into several categories. This study also went through a selection stage from 414 articles.

This study utilizes secondary data sourced from previous studies. Data is taken from Google Scholar in the form of journal articles. Multiple predefined keywords (such as "Artificial Intelligence," "fraud," or "managerial") are combined to do article searches AND (“AI detects fraud” OR “Detecting managerial fraud” OR “Managerial AI” OR “Use of AI” OR “AI” OR “Fraud AI” OR “AI detecting managerial fraud”)).

The eligibility criteria in selecting articles for this study include the use of Indonesian and English in the study, articles must be available in full and free of charge, articles must come from research journals, and articles must have keywords that are relevant to the research topic.

After selecting ten articles that meet the requirements for analysis, data from these articles will be extracted into a table that includes information such as author names, titles, and research results.

3. RESULT AND DISCUSSION

After obtaining relevant articles that meet the selection criteria, the results of these articles will be presented in the following table.

Table 1 Artificial Intelligence for detecting Managerial Fraud

No	Author	Title	Result
1	(Putri, 2024)	Transformasi Pengetahuan di Era Teknologi Big Data dan Kecerdasan Buatan (AI)	AI helps detect fraud by identifying patterns and anomalies in accounting data, which usually indicate fraud or error. In addition, AI also helps companies in regulatory compliance more efficiently, especially regarding accounting and reporting regulations.
2	(Dewi & Dewayanto, 2024)	Tinjauan Komprehensif Literatur tentang Penggunaan	Artificial intelligence (AI) plays a vital role in detecting and preventing financial fraud in the

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		Kecerdasan Buatan, Pembelajaran Mesin, dan Analisis Big Data dalam detech farud finance.	banking sector. AI analyzes big data, monitors transactions, and identifies suspicious behavior, thereby improving detection accuracy and strengthening cybersecurity. In addition, AI supports decision-making through predictive insights, enhancing consumer protection and market integration.
3	(Alqafi & Azizah, 2024)	Analisis dan penerapan Kecerdasan Buatan untuk Meningkatkan Proses Audit.	AI can effectively detect suspicious patterns in transaction data, helping auditors identify fraud quickly and accurately. With the ability to process big data and develop predictive models, AI improves audit efficiency and accuracy. This technology allows auditors to reduce the burden of routine tasks and focus on more strategic and complex areas.
4	(Amelia et al., 2024)	Pemanfaatan Kecerdasan Buatan dalam Pendidikan: Tinjauan Literatur	The study shows that AI plays a significant role in detecting fraud by improving audit efficiency. AI analyzes real-time transaction data to identify suspicious patterns and anomalies, minimizing the risk of errors. However, challenges such as data privacy and cybersecurity need to be addressed.
5	(Mawlidy et al., 2024)	Potensi Kecerdasan Buatan untuk Mencegah Penipuan: Analisis Literatur	AI has a significant role in detecting managerial fraud, but its implementation still faces challenges in terms of data quality, complex algorithms, and privacy protection. Collaboration between AI technology and human auditors is essential to ensure audit integrity and accurate fraud detection.
6	(Nainggolan, 2024)	Effects of Buatan Kecerdasan on the Effectiveness of the Akuntansi System	Efficiency, accuracy, transparency, productivity, and the caliber of financial reporting have all increased as a result of the application of AI in accounting systems. AI also plays a vital role in

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			fraud detection and predictive analysis, making it crucial for the improvement of accounting systems.
7	(Okinaldi & Aziza, 2024)	Implementasi Teknologi Audit dalam Era Digital	AI and other digital technologies have great potential to help auditors detect fraud more efficiently and accurately, by improving predictive capabilities and detecting suspicious patterns.
8	(Raihan et al., 2024)	Analisis Dampak Perkembangan Teknologi AI Dalam Meningkatkan Efisiensi Operasional Bank Syariah (Studi Kasus Bank Sumut Kantor Cabang Syariah Medan Ringroad)	The application of artificial intelligence increases the efficiency of financial institutions by speeding up transactions, reducing costs, and improving services. AI-based fraud detection systems identify fraud in real-time, improving security, and reducing risk. AI also helps manage risk and increase revenue through more efficient digital services.
9	(Ramadhani & Trimuliani, 2024)	Utilizing Artificial Intelligence in the Banking Sector: A Comprehensive Review of the Literature	The use of Artificial Intelligence (AI), especially Machine Learning, is effective in detecting fraud in the banking sector. AI can quickly analyze large financial transactions, identify suspicious patterns, and detect anomalies that indicate fraud. This technology enhances banks' ability to monitor suspicious transactions in real-time and reduce financial risks due to fraud, such as credit card fraud.
10	(Shamaya et al., 2023)	Studi Literatur: Artificial Intelligence dalam Audit	Artificial Intelligence (AI) is effective in detecting audit fraud by analyzing transaction data to find suspicious patterns. AI improves audit efficiency and accuracy, but subjective judgments and ethical decisions still require human intervention, so it cannot completely replace auditors.

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The use of artificial intelligence (AI) in detecting managerial fraud has become an increasingly important topic along with technological developments and the need for organizations to maintain integrity and public trust. In this context, Putri, (2024) explains that the accounting transformation that is occurring in the era of big data and AI technology offers various tools and methods that can be used to improve accuracy and efficiency in the fraud detection process. AI enables the analysis of large amounts of data with speed and accuracy that cannot be achieved by manual methods. With the ability to identify suspicious patterns and detect anomalies in data, AI provides a more proactive and strategic approach to fraud risk management. Therefore, the application of this technology can contribute significantly to reducing financial losses caused by fraud and increasing transparency in financial reporting.

In a study conducted by Mawlidy et al., (2024) the capabilities of AI in fraud detection are explained in more depth. They note that by using machine learning algorithms, AI can learn from historical data and identify suspicious behavior. This approach allows organizations to not only detect fraud that has occurred, but also predict the likelihood of fraud occurring in the future. Thus, AI can provide valuable information for management in formulating more effective fraud prevention strategies. This study shows that AI not only functions as a detection tool, but also as a predictive tool that can increase awareness of potential risks in the organization.

One of the important components in using AI for fraud detection is the quality of the data used in the analysis model. Nainggolan, (2024) emphasized that the effectiveness of the accounting system is highly dependent on accurate and consistent data. Therefore, before implementing AI technology, organizations need to ensure that they have a good data collection and processing system. Without high-quality data, the AI model developed may not be able to produce valid and reliable results. This shows the importance of good internal control and monitoring processes in ensuring data integrity, which in turn will affect the results of the analysis carried out by AI.

Artificial intelligence also plays a role in reducing reliance on manual procedures that are often prone to human error. In many organizations, traditional audits involve a long and tedious manual inspection process. According to Okinaldi & Aziza, (2024) the application of audit technology in the digital era allows auditors to use AI-based tools to speed up the audit process and improve accuracy. By automating routine tasks, auditors can shift their focus to more strategic analysis and deeper risk evaluation. Thus, AI not only increases efficiency but also provides opportunities for auditors to develop more valuable insights. However, despite the many benefits offered by AI, its implementation also brings a number of challenges that need to be addressed. Alqafi & Azizah, (2024) noted that the challenges faced by organizations in implementing AI include data security and privacy issues. In collecting and analyzing data needed to detect fraud, organizations often have to deal with private data. Thus, it's critical that businesses put in place sufficient security measures to safeguard data and ensure that the use of AI does not violate individual privacy. Lack of understanding of the need for data protection can lead to serious reputational damage and legal problems for organizations.

In addition, the importance of human resource skills in the implementation of AI cannot be ignored. Amelia et al., (2024) the ability of Artificial Intelligence to provide real-time, fast, and efficient data information has a positive impact on its users, including in management

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accounting. This digital technology also helps management accounting in obtaining limited and difficult to access information.

The role of AI in detecting fraud can also be seen in the context of the banking industry. Ramadhani & Trimuliani, (2024) conducted a systematic review of the use of AI in the banking industry, and found that this technology has been applied to strengthen internal controls and detect suspicious transactions. By analyzing transaction patterns and customer behavior, AI can help banks respond quickly to potential fraud, thereby reducing the risk of loss. This study shows that the application of AI in the banking sector not only improves operational efficiency but also strengthens customer trust in the existing financial system.

Artificial intelligence also contributes to efforts to increase transparency and accountability in accounting and management practices. Shamaya et al., (2023) noted that the application of AI in auditing can encourage more ethical practices among managers and employees. By using AI to analyze data, organizations can create a more transparent environment, where financial and operational information can be accessed and understood by all stakeholders. This not only strengthens accountability but also increases public trust in the organization. The use of AI as a fraud detection tool, when done ethically, can create a more positive organizational culture.

In addition, in the context of AI in detecting managerial fraud, Dewi & Dewayanto, (2024) emphasized that regarding the role of artificial intelligence (AI) in detecting financial fraud, it is emphasized that AI increases the effectiveness of detection through in-depth data analysis and responsiveness to changing fraud patterns. The use of natural language processing (NLP) techniques allows the identification of fraud indications from various data sources. High-accuracy AI models are essential to reduce errors and financial losses, so the integration of AI with big data analytics and machine learning is key to effectively detecting fraud in financial institutions.

From a practical perspective, the application of AI in managerial fraud detection must be carried out by considering the context and characteristics of the organization. Raihan et al., (2024) in their analysis of the impact of AI technology on the operational efficiency of Islamic banks emphasize the importance of adapting technology to the specific needs of the organization. Each organization has unique systems and processes, and AI technology must be integrated in a way that is aligned with existing business strategies and objectives. In this case, collaboration between the information technology team and the accounting team is very important to design appropriate and effective AI solutions.

As technology advances, it is important to continue to assess and evaluate the impact of AI in fraud detection. Further research is needed to understand how this technology can be adapted and developed to address new challenges that arise. On the other hand, researchers and practitioners must work together to create guidelines and best practices in artificial intelligence to guarantee that this technology is applied sensibly and morally By prioritizing transparency, accountability, and ethics, Fraud detection using AI can lead to the development of a better and more trustworthy financial system.

In closing, the use of AI in detecting managerial fraud not only offers a practical solution to a complex problem, but also opens up new opportunities to improve efficiency and transparency in accounting practices. By integrating this technology into audit and internal control processes, organizations can strengthen their defenses against fraud and increase public trust. While there are challenges to overcome, with the right approach and a deep understanding of the potential and risks of AI, organizations can reap significant benefits from this technology. Therefore, it is important for all parties involved to continue to learn

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and adapt to the changes brought about by artificial intelligence in the world of accounting and management.

In this digital age, the application of artificial intelligence (AI) to identify management fraud has shown to be a very useful technique. Possessing the capacity to examine vast quantities of data and spot trends that are invisible to humans, AI is able to provide deeper and more accurate insights into potential fraud. In the context of accounting and auditing, this technology offers a more systematic and targeted approach to identifying suspicious behavior. The application of AI allows organizations to not only detect fraud that has occurred, but also predict the likelihood of fraud in the future, which provides a competitive advantage in maintaining the integrity of financial statements.

However, the effectiveness of AI in detecting fraud is highly dependent on the quality of the data used. Accurate, consistent, and relevant data are absolute requirements for AI algorithms to work optimally. If the data used is incomplete or flawed, the analysis results obtained can be misleading, even leading to wrong decisions. Therefore, it is important for organizations to have a good data collection and processing system, as well as implement strict monitoring practices to maintain data integrity. The process of cleaning and validating data before being applied in an AI model must be a top priority to ensure accurate and reliable results.

In addition to data quality, another challenge faced in implementing AI is the need for human resource skills. Staff who are trained and understand how AI technology works will be more effective in implementing and managing this system. Without the support of employees who have a good understanding of this technology, the potential of AI cannot be fully utilized. Therefore, organizations need to provide adequate training and skills development for their employees. In addition, the involvement of cross-functional teams, including IT, accounting, and management, is essential in designing solutions that suit the needs of the organization and ensure the success of AI implementation.

On the other hand, the data security aspect is also very crucial in the use of AI. Given that AI requires access to sensitive data, organizations must take the necessary steps to protect such information. Strict data security policies and clear procedures must be implemented to prevent data breaches and misuse of information. In addition, understanding regulations related to data protection, such as GDPR or other local regulations, is essential to ensure that organizations comply with applicable provisions and avoid possible legal consequences.

The application of AI in fraud detection also makes a significant contribution to increasing transparency and accountability in organizations. By using AI-based tools, auditors can conduct a more in-depth analysis of financial statements and existing transactions. This not only helps in detecting fraud but also provides a clearer picture of the financial health of the organization. In addition, the use of AI can strengthen the culture of transparency within the organization, where all stakeholders can access relevant information and understand the decision-making process carried out by management.

The combination of traditional methods and modern technologies, such as fraud diamonds, can also improve the effectiveness of fraud detection. By understanding the motives, opportunities, and capabilities of fraudsters, auditors can use AI to analyze data more deeply and find patterns that manual analysis may have missed. This approach allows auditors to be more proactive in responding to potential fraud and take more effective preventive measures. Therefore, the integration of AI technology with traditional audit methods is very important in improving fraud detection capabilities.

In the context of the banking industry, the application of AI has shown positive results in identifying suspicious transactions. By analyzing transaction patterns and customer

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behavior, banks can respond more quickly to potential fraud, thereby reducing the risk of potential losses. In this case, AI serves as a supporting tool that allows banks to improve internal controls and maintain customer trust in the financial system. In addition, the use of AI in the banking industry also provides opportunities for innovation in services, where banks can offer products that are more in line with customer needs while maintaining integrity.

On the other hand, challenges in implementing AI also include ethical and moral issues. Organizations need to consider the ethical implications of using AI, especially related to the collection and analysis of personal data. Openness and transparency in the use of this technology are key to maintaining stakeholder trust. By prioritizing ethics in the use of AI, organizations can not only reduce the risk of privacy violations but also build a good reputation in the eyes of the public. This can strengthen the relationship between the organization and its stakeholders, which is very important for business sustainability.

Furthermore, the importance of continuous research and development in the field of AI cannot be ignored. With the rapid development of technology, organizations must be ready to adapt to the changes and innovations that continue to emerge. In-depth research on new methods and algorithms in AI can provide valuable new insights for organizations in their efforts to detect fraud. In addition, collaboration between academics, practitioners, and technology developers is important to create effective and relevant solutions in today's business context.

Overall, the use of AI in managerial fraud detection is a significant step forward in improving the effectiveness and efficiency of risk management. While the challenges cannot be ignored, with the right approach, organizations can harness the potential of AI to create a more transparent and accountable system. Through a deep understanding of this technology and the involvement of all relevant parties, it is hoped that the use of AI can be optimized to support better accounting and auditing practices in the future. Responsible and ethical implementation will ensure that AI becomes a useful tool for all stakeholders, and helps organizations achieve their goals of maintaining integrity and public trust.

4. CONCLUSSION

The conclusion regarding The application of artificial intelligence (AI) in management fraud detection underlines the importance of this technology as a strategic tool that can improve the accuracy and efficiency in identifying suspicious behavior. Organizations may identify fraud more proactively because to AI's capacity to swiftly and effectively evaluate vast volumes of data. This not only helps in reducing the financial risks that companies may face, but also strengthens public trust in the integrity of the financial statements presented. In an era where data is a valuable asset, the use of AI in accounting and auditing processes is becoming increasingly relevant and essential.

On the other hand, the implementation of AI in fraud detection also brings a number of challenges that need to be considered. The quality of data used in the analysis is one of the key factors that can affect the effectiveness of the AI system. Without accurate and consistent data, the results obtained from AI analysis can be invalid. Therefore, organizations need to ensure that their data collection and processing systems can support the application of this technology. By implementing good controls in data management, companies can maximize the potential of AI in detecting fraud.

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In addition to data issues, human resource skills are also a determining factor in the success of AI implementation. Employees who are well-trained and have a good understanding of this technology can be more effective in utilizing existing tools to detect fraud. Therefore, it is important for organizations to provide sufficient training for their staff, so that they are not only able to use technology, but also understand how to interpret the analysis results provided by AI. This will create better synergy between technology and humans in managing fraud risks.

In addition, the ethical and security aspects of data should not be overlooked. By collecting and analyzing sensitive data, organizations must implement adequate protection measures to maintain individual privacy and protect the information they manage. Failure to understand or comply with data security regulations can have serious consequences for an organization's reputation and operations. Therefore, it is important for companies to develop clear and transparent policies regarding the use of data and the application of AI technologies.

Overall, the use of AI in managerial fraud detection offers many significant benefits, but also requires serious attention to the challenges and risks that may arise. By utilizing this technology responsibly and ethically, organizations can improve their ability to detect and prevent fraud, and build a more transparent and accountable system. Through continuous research and development, it is hoped that the use of AI can be optimized to support better accounting and auditing practices in the future.

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