



DAB

GAIA Hackathon

AI-Powered Justice: Legal Research

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Agenda



- 1 Who is DAB?
- 2 Introduction
- 3 Problem Statement
- 3 Our Rule in 2030 Vision
- 4 How Our Model Works
- 5 Benefits For Legal Professionals
- 6 Impact On Society
- 7 Future Works
- 8 Challenges And Limitations
- 9 Conclusion





Who is DAB?

We are a distinguished Saudi company with young Saudi cadres.

We have work experience in the field of data and AI. For further development in the field.

We are proud of our team composed of people interested in the field of data and AI, to provide technical solutions based on data and AI with high quality.

Introduction

The world of law is vast and complex, with numerous statutes, regulations, and precedents to consider. For legal professionals, accessing the right information quickly can be a daunting task. That's why we created an AI text generator for judicial systems that uses cutting-edge technology to help users find the laws they need faster than ever before.

Our innovative system is designed to streamline legal research and improve efficiency in the courtroom. By harnessing the power of artificial intelligence, we've developed a tool that can analyze vast amounts of legal data and produce relevant results in seconds. With our AI text generator, legal professionals can save time and focus on what really matters - delivering justice.



Problem Statement

Citizens, judiciary officials, and lawyers often encounter difficulties when attempting to access various systems and databases for legal research, case analysis, and information retrieval. The existing methods of accessing these systems require navigating through complex interfaces and utilizing specific query languages, which can be time-consuming and challenging for individuals without technical expertise. There is a need for an AI-powered solution that utilizes Text Generation technology to provide a user-friendly tool that enables easy access to multiple systems, empowering citizens, judiciary personnel, and lawyers to efficiently retrieve and analyze information for legal purposes.



2030 Vision



رؤية VISION 2030

المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

-  برنامج جودة الحياة
-  برنامج الاستدامة المالية
-  برنامج الإسكان
-  برنامج تحول القطاع الصحي
-  برنامج تطوير القطاع المالي
-  برنامج خدمة ضيوف الرحمن
-  برنامج التحول الوطني
-  برنامج صندوق الاستثمارات العامة
-  برنامج الخصخصة
-  برنامج تطوير الصناعة الوطنية والخدمات اللوجستية
-  برنامج تنمية القدرات البشرية

Our Rule in 2030 Vision



The Pillars of Vision



An Ambitious Nation

Level 1 Main Goals

5. Enhancing government effectiveness

Sub-Objectives - Level 2

3.5 Effectively engaging with citizens

Detailed Objectives - Level 3

2.3.5 Supporting channels of communication with citizens and the business community

Sub-Objectives - Level 2

2.5 Improving the performance of the government apparatus

Detailed Objectives - Level 3

4.2.5 Developing e-government



Thriving Economy

Level 1 Main Goals

4. Increasing employment rates

Sub-Objectives - Level 2

3.4 Empowering the creation of employment opportunities through small and medium-sized enterprises (SMEs) and micro-projects

Detailed Objectives - Level 3

2.3.4 Increasing the contribution of small and medium-sized enterprises (SMEs) to the economy

1.3.4 Enhancing and supporting a culture of innovation and entrepreneurship

3. Economic development and diversification

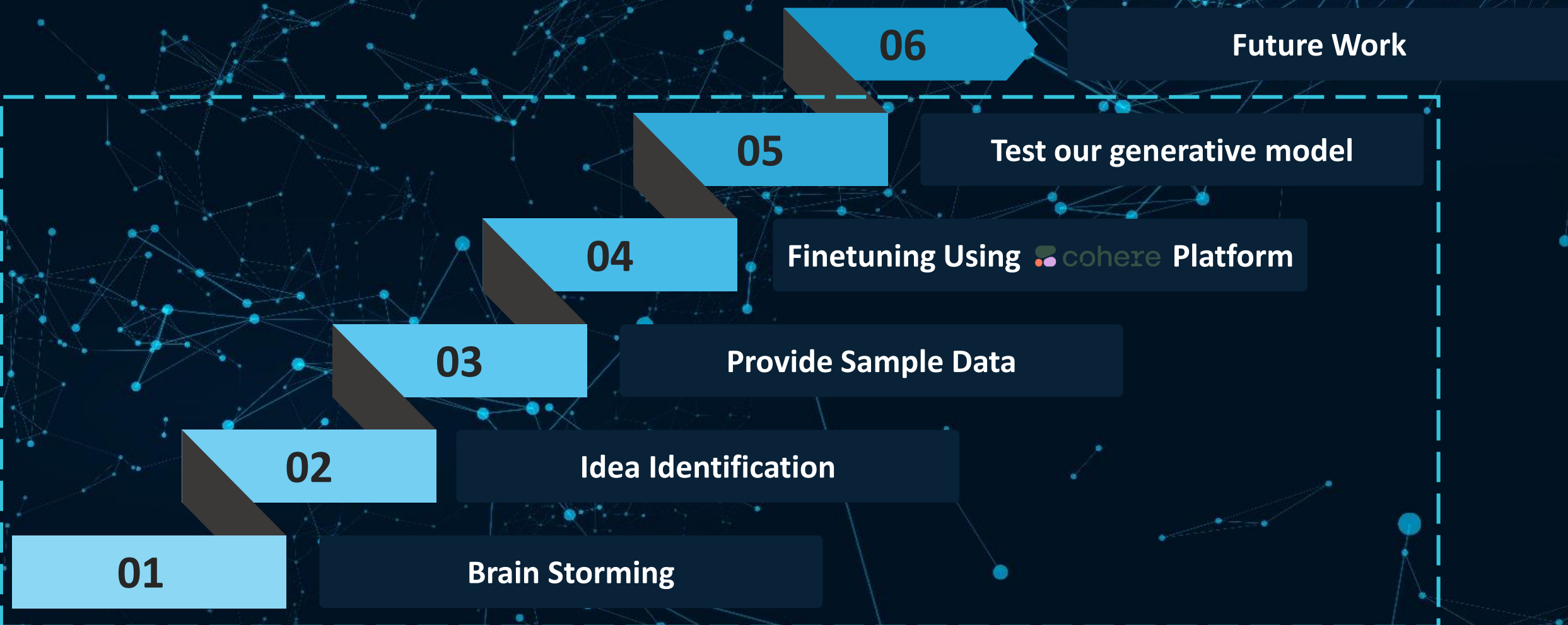
Sub-Objectives - Level 2

3.3 Unlocking the potential of promising non-oil sectors

Detailed Objectives - Level 3


2.3.3 Development of the digital economy.

How We Works!



How Our Model Works

Our AI text generator uses natural language processing (NLP) algorithms to analyze legal texts and identify key concepts and phrases. The system can also learn from user behavior, refining its search algorithms over time to provide even more accurate and relevant results. One of the key advantages of our AI text generator is its ability to handle legal systems. Our system can help you find what you need.

In training our model, we used the  **cohere** model, and we reached an accuracy of more than 96% in generating texts based on the data sample used. The sample data was collected from various sources such as judicial systems and tweets from official judicial accounts such as the account of the Saudi Ministry of Justice to reach reliable data.



How It Will Be



Here is the main page of **Your Judicial Assistant**. You can try the suggested texts for inquiry, and a field to write custom inquiries.

The screenshot shows the main page of the 'Your Judicial Assistant' web application. The interface is in Arabic and features a clean, modern design. At the top, there is a navigation bar with a hamburger menu icon, a user profile icon labeled 'User', and logos for the Ministry of Justice (المساعد القضائي) and DAB. The main content area is centered and features a large blue icon of a scale of justice and a brain. Below this, the heading reads 'مرحبا بك في مساعدك القضائي'. There are three white boxes containing suggested text for inquiry: 'شركتي تأخرت علي في دفع الرواتب لمدة أربع اشهر ماهي الطريقة للمطالبه بحقوقتي وماهي المواد النظامية التي تدعمني', 'كم يوم يحق للشركة تأخير الرواتب', and 'أذكر لي المادة الثانية من نظام الأحوال الشخصية'. At the bottom, there is a search bar with a paper plane icon and the text 'اكتب استفسارك'.

How It Will Be



The screenshot shows a mobile application interface with a white background and a dark blue header. The header contains a menu icon, a user profile icon labeled 'User', and two logos: 'المساعد القانوني' (Legal Assistant) and 'DAB'. The main content area is a light gray box with a white border. It contains a prompt in Arabic: 'أذكر لي المادة الثانية من نظام الأحوال الشخصية' (Tell me Article 2 of the Personal Status Law) followed by a blue 'U' icon. Below the prompt is a completion in Arabic: 'المادة الثانية من نظام الأحوال الشخصية نصها هو (لكل من الخاطب والمخطوبة العدول عن الخطبة)'. At the bottom of the screen, there is a white bar with a paper airplane icon and the text 'اكتب استفسارك' (Write your question).

Prompt: Please mention Article 2 of the Personal Status Law.

Completion: Article 2 of the Personal Status Law states that both the fiance and the fiancée have the right to retract the engagement.

The screenshot shows a mobile application interface with a white background and a dark blue header. The header contains a menu icon, a user profile icon labeled 'User', and two logos: 'المساعد القانوني' (Legal Assistant) and 'DAB'. The main content area is a light gray box with a white border. It contains a prompt in Arabic: 'كم يوم يحق للشركة تأخير الرواتب' (How many days is the company allowed to delay the salaries?) followed by a blue 'U' icon. Below the prompt is a completion in Arabic: 'في حال حصل تأخير لمدة شهرين فإنه يتم إيقاف كافة الخدمات للجهة ماعدا خدمة تجديد واصدار رخص العمل فقط , وفي حال التأخر لثلاث اشهر يتم إيقاف كافة الخدمات'. At the bottom of the screen, there is a white bar with a paper airplane icon and the text 'اكتب استفسارك' (Write your question).

Prompt: How many days is the company allowed to delay the salaries?

Completion: In case of a two-month delay, all services for the entity will be suspended except for the service of renewing and issuing work permits only. If the delay extends to three months, all services will be suspended.

How It Will Be



The screenshot shows a user interface with a header containing a menu icon, a user profile icon labeled 'User', and logos for 'المساعد القضائي' and 'DAB'. The main content area contains two text blocks. The first block, marked with a 'U' icon, reads: 'شركتي تأخرت علي في دفع الرواتب لمدة أربع اشهر ماهي الطريقة للمطالبه بحقوقتي وماهي المواد النظامية التي تدعمني'. The second block, marked with a 'U' icon, reads: 'بناءً على نظام العمل يمكنك الاستناد على المادة رقم واحد وثمانون من نظام العمل والرفع عن طريق لجنة تسوية الخلافات العمالية من تم المحكمة اذا لم تتم التسوية'. At the bottom, there is a search bar with a magnifying glass icon and the text 'اكتب استفسارك'.

Prompt: My company has delayed paying my salaries for four months. What is the process to claim my rights, and what are the legal resources that support me?

Completion: Based on the labor law, you can refer to Article 81 of the labor law and file a complaint through the Labor Disputes Settlement Committee, and then proceed to the court if a settlement is not reached.

The screenshot shows a user interface with a header containing a menu icon, a user profile icon labeled 'User', and logos for 'المساعد القضائي' and 'DAB'. The main content area contains two text blocks. The first block, marked with a 'U' icon, reads: 'يوجد ورقة اخلاء ملزقه على باب منزلي كيف اعرف ان هالورقة مب مزوره وانها من المحكمة'. The second block, marked with a 'U' icon, reads: 'يمكنك الاستعلام عن تفاصيل طلبات التنفيذ من خلال الدخول على بوابة ناجز عبر الرابط التالي واختيار (التنفيذ) ثم استعراض تفاصيل الطلبات المطلوبة'. At the bottom, there is a search bar with a magnifying glass icon and the text 'اكتب استفسارك'.

Prompt: There is an eviction notice affixed to my door. How can I determine if this notice is not forged and that it is from the court?

Completion: You can inquire about the details of execution requests by accessing the Najiz portal through the following link: najiz.sa/applications/crm/list Then review the details of the requested applications.

Let's Try It!



Press Here

96.66%

↑ 59%

Accuracy

Correct predictions across
all predictions made

0.21

↓ -2.74

Loss

Indicates how far off the
model's predictions are
from true values

Dataset

DATASET	EXAMPLES
Training	90

Benefits For Legal Professionals



Our AI text generator offers numerous benefits to legal professionals. First and foremost, it saves time by providing fast and accurate search results. This means lawyers, judges, and other legal professionals can spend less time sifting through documents and more time focusing on their cases.

In addition, our system can help legal professionals stay up-to-date with changes in the law. By analyzing new legislation and cross-referencing it with existing laws and precedents, our AI text generator can alert users to important updates and changes that may affect their cases. This ensures that legal professionals are always working with the most current information available.

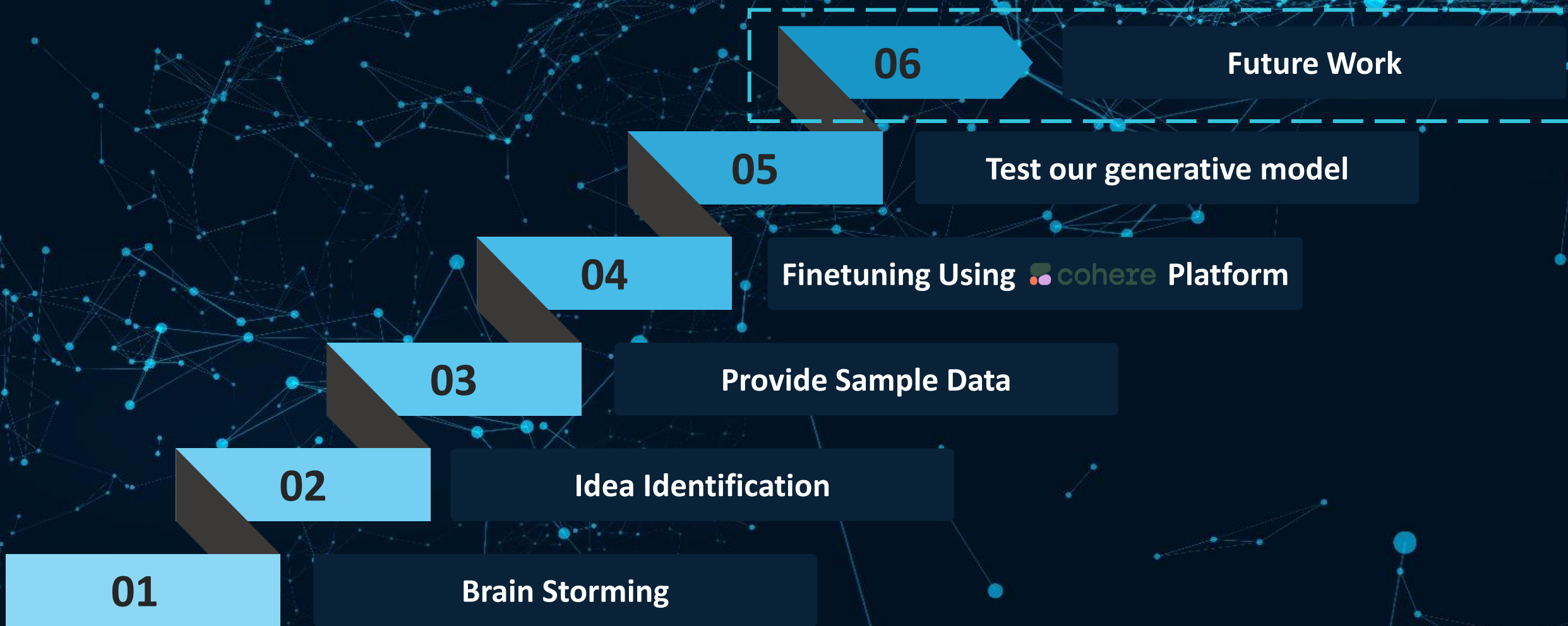


Impact On Society

Our AI text generator isn't just beneficial for legal professionals - it can also help society better understand the law. By providing easy access to legal texts and explanations, our system empowers individuals to make informed decisions and advocate for themselves. For example, imagine a citizen who wants to learn more about their rights as a tenant. With our AI text generator, they can quickly find relevant laws and regulations, as well as explanations and examples to help them understand what their rights are and how to enforce them. This not only helps individuals protect themselves, but also promotes greater transparency and accountability in the legal system as a whole.




Future Works



Future Works



Here are some directions for future work and improvements:

- **Dataset Expansion:** We consider expanding and refining our training dataset. Collect more diverse and comprehensive legal texts, court judgments, legal precedents, and related documents to enhance the model's knowledge and understanding of legal concepts.
- **Fine-tuning:** We will explore the possibility of fine-tuning our AI model using domain-specific legal data. Fine-tuning can help the model adapt to legal jargon, specific legal frameworks, and nuances of judicial systems, making its generated outputs more accurate and contextually appropriate. Also, we want to integrate and train our AI model into an 'Allam Model ' to be all under one umbrella and more efficiently
- **Quality Assurance and Validation:** Continuously evaluates and validates the model's outputs against real-world legal standards. We are going to develop a robust quality assurance process involving legal experts who can review and verify the generated text for accuracy, relevance, and compliance with legal regulations.
- **Ethical Considerations:** We pay attention to the ethical implications of using AI in the legal domain. Ensure fairness, transparency, and accountability in the model's decision-making processes. Address issues such as bias, privacy, and data security to build trust and confidence in the system.
- **UI/UX:** Enhance the user interface of the text generation tool to make it more intuitive, user-friendly, and tailored to the needs of legal professionals. We will consider incorporating features like document structuring, automated citation generation, and search capabilities to improve usability and efficiency.

Future Works



- **Legal Research and Summarization:** We extend the capabilities of our model to assist with legal research tasks. Explore techniques for document summarization, case law analysis, legal opinion mining, and extracting key insights from large volumes of legal texts.
- **Multilingual Support:** we consider expanding the model's language capabilities to support multiple languages commonly used in legal systems. This can broaden the reach and applicability of the tool to serve legal professionals in different regions.
- **Collaboration and Integration:** Collaborate with legal professionals, law firms, and academic institutions to gather valuable insights, domain expertise, and potential use cases.
- **Contextual Understanding:** Work on improving the model's ability to comprehend and incorporate the context of specific legal cases. Develop techniques to capture and utilize case-specific details, such as relevant statutes, precedents, and legal arguments, in generating accurate and informed responses.
- **Active Learning and Feedback Loop:** Implement a feedback loop mechanism that allows users to provide feedback on the generated text. Use this feedback to continuously improve the model's performance and address any limitations or shortcomings.

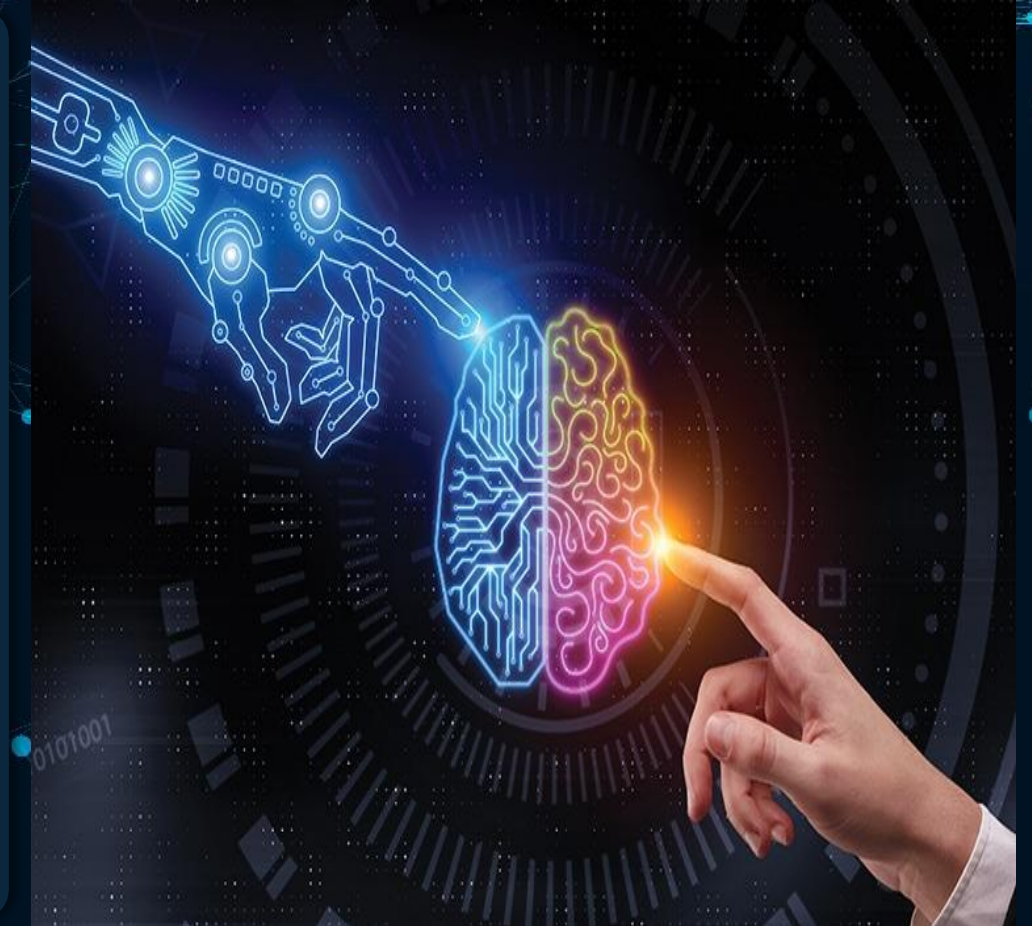
Challenges And Limitations

While our AI text generator is a powerful tool, it is not without challenges and limitations. One of the biggest challenges we face is the availability of data from the right sources and completely to get the best result, to get good results in generating.

It requires cooperation with some parties to reach a result that will benefit greatly

In addition, our system is highly dependent on the quality and availability of legal data. If the data is incomplete or inaccurate, search results may be compromised. Finally, like any technology, our AI text generator is only as good as the people who use it. It is important for legal professionals to understand how the system works and how to interpret its results in order to get the most out of it.

And we came as our biggest goal is to help legal professionals, concerned people and the community to access the required information quickly and accurately and to know their rights



Conclusion

Our AI text generator represents a major breakthrough in legal research and analysis. By leveraging the power of artificial intelligence, we've created a tool that can help legal professionals access laws faster and more efficiently than ever before. Whether you're a lawyer, judge, or citizen looking to better understand the law, our system can help you find the information you need quickly and easily. Of course, our work is far from done. As legal systems continue to evolve and grow more complex, we'll need to constantly refine and improve our technology to keep up. But we're confident that with continued investment and innovation, our AI text generator will play an important role in shaping the future of the legal profession for years to come.





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Thanks

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