SMART INDIA HACKATHON 2024

TITLE PAGE

- **Problem Statement ID –**SIH1701
- **Problem Statement Title-** AI-Driven Research Engine for Commercial Courts
- **Theme-**Smart Automation
- **PS Category-** Software
- **Team ID-** 45287
- **Team Name (Registered on portal) -** Yorozuya

Yorozuya

IDEA TITLE

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IDEA / SOLUTION :

An AI-driven research engine for faster legal research, tailored insights, outcome forecasts, multilingual support, and ethical transparency.

- **Quick Legal Access:** Aggregates case laws and statutes for fast data retrieval.
- **Tailored Insights:** Provides case-specific legal results.
- **Outcome Forecasting:** Predicts case results using historical data.
- **Multilingual Access:** Supports multiple languages for courts across India.
- **Ethical Facilitation:** Ensures neutrality and transparency in legal processes.

Problem Resolution :

- **Faster Legal Research:** Streamlines access to relevant legal data, reducing time spent on manual research.
- **Informed Decision-Making:** Provides predictive insights and tailored case results, aiding judges in faster, more accurate rulings.

Unique Value Propositions (UVP) :

- **Faster Research:** Quick access to legal data.
- **Custom Insights:** Tailored case results.
- **Outcome Forecasting:** Predicts case outcomes.
- **Multilingual**: Supports multiple languages.
- **Transparent:** Ensures ethical, neutral operations.

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TECHNICAL APPROACH

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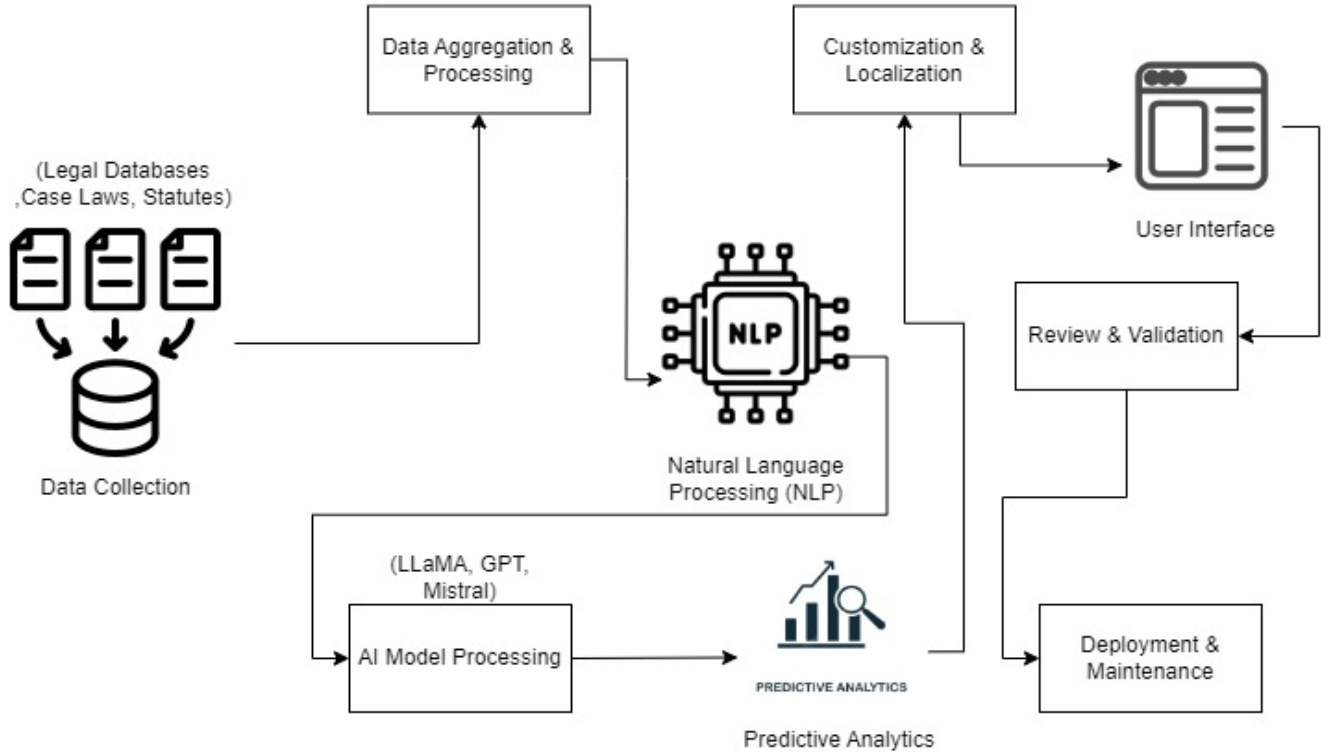
Algorithm Development:
Hugging face Tranformers& PyTorch/TensorFlow – for llm models and model training and deployment
Web Application Development:
React.js - for user interface, Node.js & Express.js - for API development.
Data Management & Search:
PostgreSQL: For structured data storage, and Elasticsearch for full-text search capabilities..
Deployment & Security:
AWS/GCP/Azure for scalable deployment; TLS/SSL for secure transmission; AES-256 for data protection; JWT for user authentication.
Multilingual Support & Ethical AI:
Translation API: Google Cloud Translation for multilingual capabilities; implement bias detection for ethical AI usage.

PROCESS FLOW ARCHITECTURE



Product Status: 30% product built completed and further build is on progress. Integration are next to be undergone

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FEASIBILITY AND VIABILITY

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Feasibility :

- Utilizes existing AI models and cloud infrastructure for integration with legal systems.
- Open-source tools and scalable cloud services reduce development and operational costs.
- Strong market demand in legal sector for faster case resolution and judicial reform.
- Easily scalable, requiring moderate legal expertise for data handling and AI training.
- Potential government support or funding could enhance financial viability.
- Operational ease with cloud deployment, but requires ongoing updates and user support.

Potential Challenges and Risks:

- Integration complexity and AI accuracy issues.
- High initial costs for cloud and data processing.
- Resistance to AI adoption and trust concerns.
- Keeping legal data updated and supporting multiple languages.

Strategies for Overcoming Challenges:

- Incremental integration and continuous AI improvement.
- Seek funding and start with pilot projects.
- Provide training and support to build trust.
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IMPACT AND BENEFITS

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Potential Impact:

Positive:

- Significant improvement in legal research speed and accuracy.
- Cost-effective solution, reducing time spent on case resolution.
- Opens new opportunities for legal professionals to focus on complex cases.
- Social benefits through faster dispute resolution, improving ease of doing business.

Negative:

- Initial costs for technology implementation and training.
- Resistance to adopting AI technology among traditional legal professionals

Benefits of the solution :

- Enhanced access to legal resources, leading to more equitable justice outcomes.
- Significant productivity gains, allowing legal professionals to focus on complex cases.
- Cost savings in legal processes, reducing the overall expense of dispute resolution.
- Growth of the legal tech market with innovative AI-driven solutions.
- Decreased paper consumption and lower carbon footprint through digital transformation.

RESEARCH AND REFERENCES

- **“AI-enabled business models in legal services: from traditional law firms to next-generation law companies?”** J Armour, M Sako - Journal of Professions and Organization, 2020 - academic.oup.com

  Link:https://doi.org/10.1093/jpo/joaa001

- **“How artificial intelligence will affect the practice of law”** Benjamin Alarie, Anthony Niblett, Albert H Yoon

  Link:https://doi.org/10.3138/utlj.2017-0052

- **“AI as the court: Assessing AI deployment in civil cases”** Erlis Themeli, Stefan Philipsen

  Link:https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3791553