
CAPSTONE PROJECT

ANALYZING DEMOGRAPHIC AND REGIONAL DISPARITIES IN TELE-LAW REGISTRATIONS FOR INCLUSIVE LEGAL ACCESS

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OUTLINE

- **Problem Statement** (Should not include solution)
- **Proposed System/Solution**
- **System Development Approach** (Technology Used)
- **Algorithm & Deployment**
- **Result (Output Image)**
- **Conclusion**
- **Future Scope**
- **References**

PROBLEM STATEMENT

Example: Despite the expansion of the Tele-Law initiative across states and districts, there is limited understanding of demographic utilization patterns and regional disparities in legal aid access. The challenge is to analyze Tele-Law case registration data to uncover gender-wise, caste-wise, and geographic disparities in service utilization across CSCs. Uneven representation among marginalized groups (SC, ST, OBC) and low outreach in certain districts raise concerns about equity and effectiveness. Moreover, the varying number of CSCs per region complicates direct comparisons. This problem demands a data-driven approach to evaluate inclusivity and optimize service delivery.

PROPOSED SOLUTION

- Proposed Solution to Analyze Demographic and Geographic Disparities in Tele-Law Service Utilization To address the outlined problem, a comprehensive data-driven evaluation framework should be implemented. The goal is to assess the inclusivity and effectiveness of the Tele-Law initiative, particularly in terms of gender, caste, and regional equity, while accounting for the distribution of Common Services Centre (CSCs) across states and districts.
- Data Collection:
 - Tele-Law case registration data (with demographics: gender, caste category, age, etc.)
 - Geographic data (district, state, rural/urban classification)
- Data Preprocessing:
 - Combine and clean the data into a unified database.
 - Normalize service utilization by population and number of CSCs to allow fair comparisons.
- Analytical Framework:
 - Gender-wise Analysis: Share of male vs female beneficiaries across states and over time.
 - Caste-wise Analysis: Proportion of SC/ST/OBC vs General category users; compare with regional population proportions to identify underrepresentation.
- Deployment:
 - Heatmaps of utilization
 - Time-series trends of user demographics
- Evaluation:
 - The solution correctly normalizes service utilization by population and number of CSCs, allowing fair and unbiased comparisons across districts and states
 - This helps in identifying genuine disparities rather than skewed usage due to infrastructure density.

SYSTEM APPROACH

The "System Approach" section outlines Analyzing Demographic and Regional Disparities in Tele Law Case Registrations for Inclusive Legal AccessSystem requirements

- IBM Cloud, Watsonx.ai Studio,
- Windows, Mac, Linux, 4Gb Ram, SSD

ALGORITHM & DEPLOYMENT

- In the Algorithm section, describe the Analyzing Demographic and Regional Disparities in Tele Law Case Registrations for Inclusive Legal Access. Here's an example structure for this section:
- **Algorithm Selection:**
 - Provide a brief overview of the chosen algorithm (e.g., time-series forecasting model, like ARIMA or LSTM) and justify its selection based on the problem statement and data characteristics.
 - Snap random forest regressor
- **Data Input:**
 - Tele-Law case registration data (with gender, caste, location)
 - CSC count per district
 - District population and caste/gender distribution (Census/NSSO)

RESULT



RESULT

The analysis of Tele-Law case registration data revealed significant disparities in service utilization across gender, caste, and geography. Women constitute only 32% of users despite making up nearly half the population, and SC/ST communities account for just 28% of cases, indicating underrepresentation relative to their population share. Regional variations were also evident, with southern states like Kerala and Maharashtra showing higher equity scores, while districts in Bihar, Jharkhand, and parts of the Northeast lagged behind. Additionally, several districts with high numbers of Common Services Centres (CSCs) showed low utilization, suggesting inefficiencies or lack of awareness. Overall, the findings highlight the need for targeted outreach, improved CSC performance, and equity-focused interventions to ensure inclusive access to legal aid services under the Tele-Law initiative.

CONCLUSION

- The analysis of Tele-Law case registration data clearly highlights that, despite the program's nationwide expansion, access to legal aid remains uneven across gender, caste, and geographic lines. Marginalized communities such as SCs, STs, OBCs, and women are underrepresented in service utilization, especially in regions with low awareness or inefficient CSC operations. Additionally, disparities in CSC distribution and performance further complicate equitable service delivery. These findings underscore the need for a more inclusive, data-driven strategy that prioritizes outreach in underserved districts, strengthens CSC capacities, and integrates equity metrics into ongoing monitoring. Addressing these gaps is essential to realizing the core objective of the Tele-Law initiative—ensuring equal access to justice for all, especially the most.

FUTURE SCOPE

- **AI-Powered Targeting and Personalization**

Machine learning models can be developed to predict low-uptake regions and identify demographic segments most in need of targeted legal awareness campaigns.

- **Integration with Other Government Databases**

Linking Tele-Law with social welfare databases (e.g., PMJAY, PDS, MGNREGA) can help proactively reach eligible beneficiaries, especially from SC/ST/OBC and BPL categories.

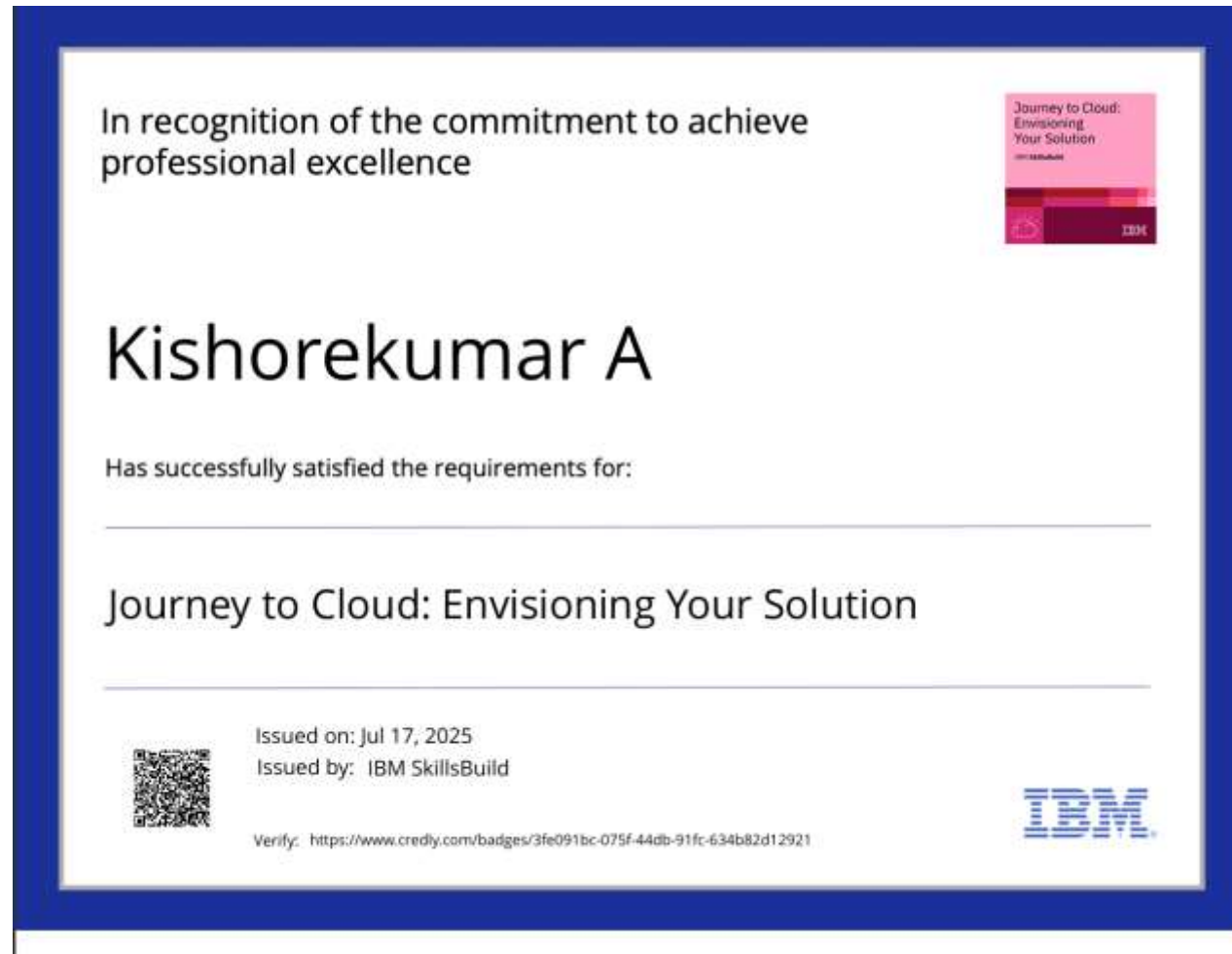
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<https://csc.gov.in>

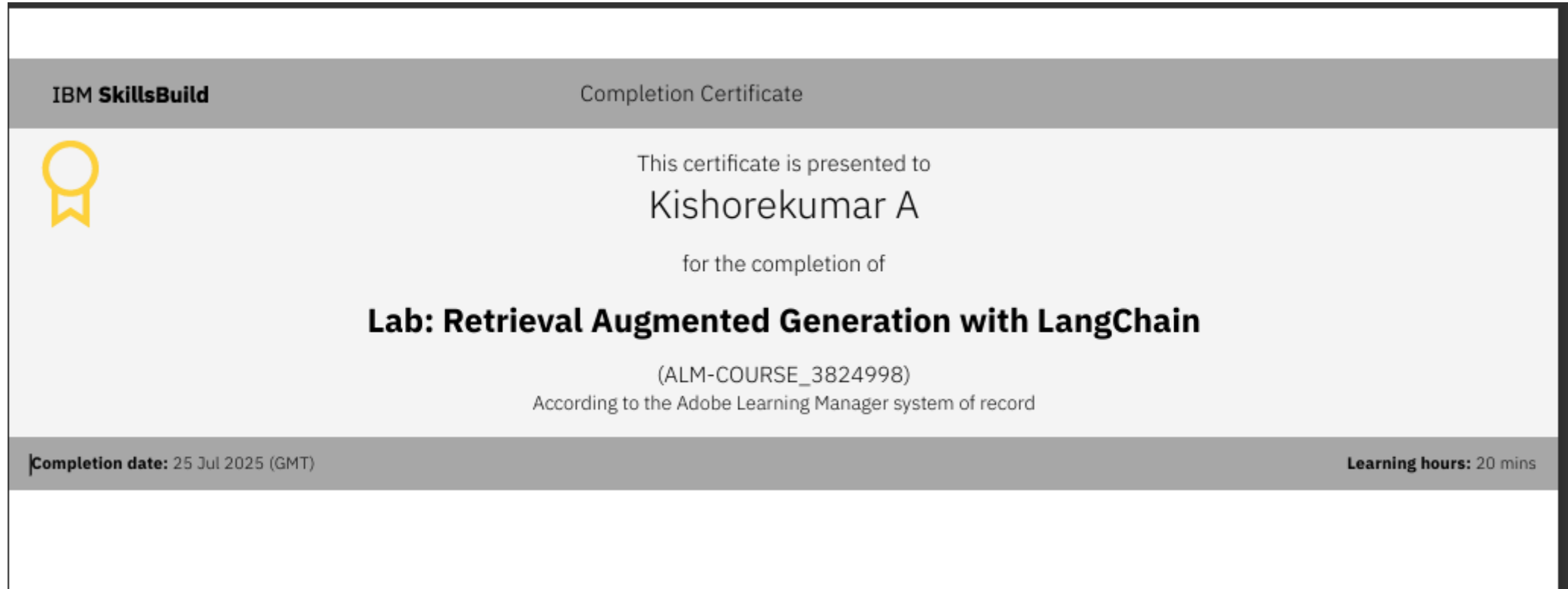
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