**Problem definition of electricity prices predictions :**

1. Empathize:

- Understand the stakeholders involved, such as consumers, energy companies, and regulators.

- Gather data on historical electricity prices, including factors affecting them (e.g., demand, weather, fuel prices).

2. Define:

- Clearly define the problem you want to solve, such as predicting future electricity prices accurately.

- Set specific goals and metrics for your prediction model.

3. Ideate:

- Brainstorm potential solutions, including machine learning models, statistical approaches, or hybrid methods.

- Consider using external data sources like weather forecasts, economic indicators, or renewable energy production data.

4. Prototype:

- Create a prototype of your prediction model. This may involve data preprocessing, feature engineering, and selecting appropriate algorithms.

- Start with a simple model and iterate to improve accuracy.

5. Test:

- Evaluate your model’s performance using historical data. Use metrics like Mean Absolute Error (MAE) or Root Mean Squared Error (RMSE).

- Gather feedback from domain experts and stakeholders to refine your model.

6. Implement:

- Deploy your prediction model in a real-world setting. This could be within an energy company’s infrastructure or as a web application for consumers.

7. Iterate:

- Continuously monitor and update your model to adapt to changing factors affecting electricity prices.

- Gather feedback and refine the model over time.

8. Validate:

- Assess the model’s performance in a real-world context. Compare its predictions to actual electricity prices to ensure accuracy and reliability.

9. Scale:

- If successful, consider scaling your prediction model to cover larger geographic regions or timeframes.

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