CYBER SECURITY

KEYLOGGER AND SECURITY

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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: Currently Rental bikes are introduced in many urban cities for the enhancement of mobility comfort. It is important to make the rental bike available and accessible to the public at the right time as it lessens the waiting time. Eventually, providing the city with a stable supply of rental bikes becomes a major concern. The crucial part is the prediction of bike count required at each hour for the stable supply of rental bikes.

PROPOSED SOLUTION

- The proposed system aims to address the challenge of predicting the required bike count at each hour to ensure a stable supply of rental bikes. This involves leveraging data analytics and machine learning techniques to forecast demand patterns accurately. The solution will consist of the following components:
- Data Collection:
  - Gather historical data on bike rentals, including time, date, location, and other relevant factors.
  - Utilize real-time data sources, such as weather conditions, events, and holidays, to enhance prediction accuracy.
- Data Preprocessing:
  - Clean and preprocess the collected data to handle missing values, outliers, and inconsistencies.
  - Feature engineering to extract relevant features from the data that might impact bike demand.
- Machine Learning Algorithm:
  - Implement a machine learning algorithm, such as a time-series forecasting model (e.g., ARIMA, SARIMA, or LSTM), to predict bike counts based on historical patterns.
  - Consider incorporating other factors like weather conditions, day of the week, and special events to improve prediction accuracy.
- Deployment:
  - Develop a user-friendly interface or application that provides real-time predictions for bike counts at different hours.
  - Deploy the solution on a scalable and reliable platform, considering factors like server infrastructure, response time, and user accessibility.
- Evaluation:
  - Assess the model's performance using appropriate metrics such as Mean Absolute Error (MAE), Root Mean Squared Error (RMSE), or other relevant metrics.
  - Fine-tune the model based on feedback and continuous monitoring of prediction accuracy.
  - Result:

SYSTEM APPROACH

The "System Approach" section outlines the overall strategy and methodology for developing and implementing the rental bike prediction system. Here's a suggested structure for this section:

- **System requirements**
- **Library required to build the model**

ALGORITHM & DEPLOYMENT

- In the Algorithm section, describe the machine learning algorithm chosen for predicting bike counts. 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.
- **Data Input:**
  - Specify the input features used by the algorithm, such as historical bike rental data, weather conditions, day of the week, and any other relevant factors.
- **Training Process:**
  - Explain how the algorithm is trained using historical data. Highlight any specific considerations or techniques employed, such as cross-validation or hyperparameter tuning.
- **Prediction Process:**
  - Detail how the trained algorithm makes predictions for future bike counts. Discuss any real-time data inputs considered during the prediction phase.

OUTPUT SCREEN:

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CONCLUSION

- Summarize the findings and discuss the effectiveness of the proposed solution. Highlight any challenges encountered during the implementation and potential improvements. Emphasize the importance of accurate bike count predictions for ensuring a stable supply of rental bikes in urban areas.

FUTURE SCOPE

- Discuss potential enhancements and expansions for the system. This could include incorporating additional data sources, optimizing the algorithm for better performance, and expanding the system to cover multiple cities or regions. Consider the integration of emerging technologies such as edge computing or advanced machine learning techniques.

REFERENCES

- List and cite relevant sources, research papers, and articles that were instrumental in developing the proposed solution. This could include academic papers on bike demand prediction, machine learning algorithms, and best practices in data preprocessing and model evaluation.

THANK YOU