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Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading insurance firm worldwide Industry Type: BFSI Products & Services: Insurance Organization Size: 10000+ The insurance industry, particularly in the context of providing coverage to Public Company Directors against Insider Trading public lawsuits, faces a significant challenge in accurately determining insurance premiums. Traditional methods of premium calculation may lack precision, and there is a growing need for more sophisticated and data-driven approaches. The integration of Artificial Intelligence (AI) and Machine Learning (ML) models in predicting insurance premiums for this specialized coverage is essential to enhance accuracy, fairness, and responsiveness in adapting to evolving risk factors. The problem at hand involves developing robust AI and ML models that can effectively analyze a multitude of dynamic variables influencing the risk profile of Public Company Directors. These variables include market conditions, regulatory changes, historical legal precedents, financial performance of the insured company, and individual directorial behaviors. The goal is to create a predictive model that not only accurately assesses the risk associated with potential insider trading public lawsuits but also adapts in real-time to new information, ensuring that the insurance premiums charged by the global insurance firm are reflective of the current risk landscape. Key Challenges: Addressing these challenges will not only improve the accuracy of insurance premium predictions but also contribute to the overall efficiency and effectiveness of the insurance services provided to Public Company Directors by the leading global insurance firm. To develop an ML and AI-based insurance premium prediction model for Public Company Directors in the USA, safeguarding them against insider trading public lawsuits, we propose a comprehensive solution leveraging advanced machine learning techniques. The goal is to create a model that accurately assesses the risk associated with individual directors and adapts to dynamic market conditions. By adopting this ML and AI-based approach, the insurance company can enhance its ability to predict insurance premiums accurately, adapt to changing risk landscapes, and provide tailored coverage for Public Company Directors against insider trading public lawsuits in the dynamic environment of the USA. Building an ML and AI-based insurance premium prediction model involves the use of various tools and technologies across different stages of development. Here’s a list of tools and technologies that can be employed for creating such a model for a leading insurance firm in the USA, specifically targeting Public Company Directors against insider trading public lawsuits: It’s important to note that the choice of specific tools may vary based on the preferences of the data science team, the complexity of the model, and the existing technology stack of the insurance company. Additionally, compliance with regulatory requirements and industry standards should be considered in the selection of tools and technologies. The deliverables for an ML and AI-based insurance premium model for Public Company Directors in the USA, aiming to predict premiums for protection against insider trading public lawsuits, would encompass various stages of the development and deployment process. Here is a comprehensive list of deliverables: 1.1 Project Proposal: 1.2 Requirements Document: 2.1 Data Collection Report: 2.2 Cleaned and Preprocessed Dataset: 3.1 Feature Selection and Engineering Report: 4.1 Trained ML Models: 4.2 Model Evaluation Report: 5.1 Real-Time Integration Component: 5.2 Scenario Analysis Module: 6.1 Fairness Assessment Report: 6.2 Explainability Module: 7.1 Deployed API: 7.2 User Interface (UI): 7.3 Documentation for Integration: 8.1 Monitoring Dashboard: 8.2 Automated Model Update Pipeline: 9.1 Model Architecture Document: 9.2 Technical User Manual: 10.1 Training Sessions: 10.2 Knowledge Transfer Documentation: 11.1 Regulatory Compliance Report: 11.2 Data Privacy and Security Documentation: 12.1 Support and Maintenance Plan: By delivering these items, the insurance firm can ensure a thorough and transparent development process, facilitating successful integration and utilization of the ML and AI-based insurance premium prediction model. The implementation of an ML and AI-based insurance premium model for Public Company Directors in the USA, specifically tailored to protect them from insider trading public lawsuits, can have significant business impacts for the leading insurance firm. Here are several potential business impacts: By recognizing and leveraging these business impacts, the leading insurance firm can derive significant value from the implementation of an ML and AI-based insurance premium model tailored for Public Company Directors in the USA. Summarized: https://blackcoffer.com/ This project was done by Blackcoffer Team, a Global IT Consulting firm. This solution was designed and developed by Blackcoffer TeamHere are my contact details:Firm Name: Blackcoffer Pvt. 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Key functionalities should include data exploration, trend identification, pattern recognition, and anomaly detection, all presented in a comprehensible format. The tool must also ensure efficient handling of CSV datasets while maintaining accuracy and reliability in its analyses. CSV data is acquired from a source (local file system, cloud storage, etc.). The data is then converted into a pandas DataFrame using the read\_csv() function or similar methods provided by the pandas library. Data Cleaning operations are performed on the dataframe so that it serves as an ideal input for Pandas Agent. These may include: Column Data type conversion. Handling Duplicates Handling unnecessary columns, etc. Langchain’s Pandas Agent is initialized with the necessary parameters. These parameters include: System prompt: A custom prompt provided by the user or defined in the application. Temperature: A parameter controlling the randomness of the model’s outputs. Model: The specific model or model configuration to be used by the agent. Other relevant parameters based on the requirements and capabilities of the agent. The DataFrame created in the previous step serves as input for the Pandas Agent. It contains the structured data which will serve as input for the Pandas Agent. The user interacts with the system by posing queries in natural language. Langchain’s Pandas Agent interprets these queries using GPT-4 backend and converts them into executable commands or operations on the DataFrame. The Pandas Agent executes the operations needed on the DataFrame. These operations may include: Filtering: Selecting rows or columns based on specified criteria. Aggregation: Computing summary statistics or aggregating data based on groups. Transformation: Modifying data in the DataFrame (e.g., adding or removing columns, changing data types). Joining/Merging: Combining multiple DataFrames based on common keys or indices. Sorting: Arranging rows or columns in a specified order. Other pandas DataFrame operations as required by the user queries. The processed output is delivered to the end user through the streamlit user interface. The user can review the insights provided by the system and further refine their queries if needed. Data Analysis Tool with Streamlit frontend. To make the tool follow the Indian standards in terms of Financial Year Quarters, currency and human readable values instead of exponential values. The challenge was solved by decreasing the temperature of Pandas agent to 0 and make a custom system prompt to introduce maximum bias approximating the desirable answers. The user was able get data analysis insights without expertise in python, pandas and other tools used in the process of Data Analysis in a fraction of time compared to what it would have been if the process was done manually. 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Healthcare AI ChatBot using LLAMA, LLM, Langchain Efficient Supply Chain Assessment: Overcoming Technical Hurdles for Web Application Development Streamlined Integration: Interactive Brokers API with Python for Desktop Trading Application Efficient Data Integration and User-Friendly Interface Development: Navigating Challenges in Web Application Deployment AI Chatbot using LLM, Langchain, LLama AI Bot Audio to audio Methodology for ETL Discovery Tool using LLMA, OpenAI, Langchain Methodology for database discovery tool using openai, LLMA, Langchain Rising IT cities and its impact on the economy, environment, infrastructure, and city life by the year 2040. Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading tech firm in the USA Industry Type: IT Products & Services: IT & Consulting, Software Development, DevOps Organization Size: 100+ The client requires a Grafana dashboard that can fetch data from a web API providing historical data of building automation systems. The dashboard needs to allow manual entry of a target URL for individual buildings, selection of a history name from a dropdown or search bar, selectable time range for displaying history data, and the ability to choose from various chart types for visualization. Additionally, the client wants to set up alarms for certain metrics like CPU, RAM, and hard disk usage. Each user should only be able to view their own STier API data, which is controlled by their IP. To meet these requirements, we will set up a Grafana dashboard using the Grafana API. We will configure the dashboard to connect to the web API and fetch data based on the user’s input for the target URL, history name, and time range. For visualization, we will implement various chart types including Bar, Line, and Scatter plot charts. To set up alarms for specific metrics, we will utilize Grafana’s built-in alerting feature. The proposed Grafana dashboard will significantly enhance the business’s ability to monitor and manage building automation systems. By providing real-time data visualization and the ability to set alarms for specific metrics, the business can quickly identify and address potential issues, ensuring optimal system performance and efficiency. Furthermore, the user-specific permissions will ensure that sensitive data remains secure and accessible only to authorized individuals. This will not only streamline operations but also boost confidence among staff members who can now make informed decisions based on accurate and timely data. The dashboard’s flexibility in terms of selectable history names and time ranges will allow for comprehensive analysis of historical data, leading to improved decision-making processes. Overall, this solution will contribute to increased operational efficiency, reduced downtime, and improved customer satisfaction by ensuring smooth operation of building automation systems. https://mailhvac.postman.co/workspace/Team-Workspace~902b44a6-966b-4e59-8400-3ae02c12ce6b/collection/17767455-eb2c775e-421d-4f7c-9ec5-b4f6a73f1a5a?action=share&creator=17767455 Summarized: https://blackcoffer.com/ This project was done by the Blackcoffer Team, a Global IT Consulting firm. This solution was designed and developed by Blackcoffer TeamHere are my contact details:Firm Name: Blackcoffer Pvt. Ltd.Firm Website: www.blackcoffer.comFirm Address: 4/2, E-Extension, Shaym Vihar Phase 1, New Delhi 110043Email: ajay@blackcoffer.comSkype: asbidyarthyWhatsApp: +91 9717367468Telegram: @asbidyarthy We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. Contact us: hello@blackcoffer.com © All Right Reserved, Blackcoffer(OPC) Pvt. Ltd

# Article bctech2024: MVP for a software that analyses content from audio (Pharma-based) - Blackcoffer Insights

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# Article bctech2025: Data Engineering and Management tool (Airbyte) with custom data connectors to manage CRM database - Blackcoffer Insights

Healthcare AI ChatBot using LLAMA, LLM, Langchain Efficient Supply Chain Assessment: Overcoming Technical Hurdles for Web Application Development Streamlined Integration: Interactive Brokers API with Python for Desktop Trading Application Efficient Data Integration and User-Friendly Interface Development: Navigating Challenges in Web Application Deployment AI Chatbot using LLM, Langchain, LLama AI Bot Audio to audio Methodology for ETL Discovery Tool using LLMA, OpenAI, Langchain Methodology for database discovery tool using openai, LLMA, Langchain Rising IT cities and its impact on the economy, environment, infrastructure, and city life by the year 2040. Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading tech firm in Europe Industry Type: IT Products & Services: IT & Consulting, Software Development Organization Size: 1000+ Our company requires a robust, scalable, and secure data integration solution that can handle thousands of connections. We need to develop Airbyte connectors for various software applications listed in 2-nx-integration, including Join Portal, ClickUp, Coach Accountable, Hubspot, Quickbooks, Quickbooks Time, and Sales Flow. These connectors should be developed in Python and then wrapped into Docker images. The code should be housed in GitHub and automatically applied to Airbyte for execution using a CI/CD pipeline from GitHub to Airbyte. We also need a full production-ready version of Airbyte hosted on Google Cloud Platform (GCP) Kubernetes, secured via Google Sign In. Moreover, we want to add custom features to Airbyte to control BigQuery projects/datasets. Both Airbyte and BigQuery should be monitored via Sentry, which will also be housed/hosted in the same project for all error reporting/monitoring. We also need to develop transformations to clean and transform the data from the software source to the client’s GCP Project for BigQuery. The code for these transformations should be stored in GitHub. We propose to develop an instance of Airbyte that is production-ready on GCP over Kubernetes. This will be secured using Google Sign On linked to our organization. We will deploy Airbyte using the official documentation 8. To secure the Kubernetes setup, we plan to use Traefik’s ForwardAuth feature. Next, we will code Airbyte Python integrations for our needed software list. We have already gathered the API documentation for each software application and have started coding the integrations. Once the initial integration is complete, we will document the process in ClickUp to guide future integrations. We will use GitHub to host both the source code and Docker images of Airbyte integrations. We will also use Google Cloud’s Sentry for error reporting and monitoring. By developing a robust and scalable data integration solution using Airbyte, we aim to significantly enhance our business operations. This solution will enable us to efficiently manage and analyze data from various software applications, leading to improved decision-making processes. Firstly, the ability to extract and load data from different software applications will allow us to centralize our data management, reducing the complexity of handling multiple data sources. This will streamline our data analysis processes and provide a unified view of our business data. Secondly, the scalability of our solution means that it can handle a growing volume of data as our business grows. This is crucial in today’s digital age where businesses generate vast amounts of data daily. Lastly, by securing our data integration solution with Google Sign In, we can ensure that only authorized individuals can access our sensitive business data. This adds an extra layer of security to our data management practices and helps protect against potential data breaches. Moreover, by using Google Cloud Platform (GCP) for hosting our solution, we can take advantage of its advanced features and robust infrastructure. This will further enhance the reliability and performance of our data integration solution. Overall, implementing this solution will enable us to harness the power of data to drive our business growth and success Summarized: https://blackcoffer.com/ This project was done by the Blackcoffer Team, a Global IT Consulting firm. This solution was designed and developed by Blackcoffer TeamHere are my contact details:Firm Name: Blackcoffer Pvt. Ltd.Firm Website: www.blackcoffer.comFirm Address: 4/2, E-Extension, Shaym Vihar Phase 1, New Delhi 110043Email: ajay@blackcoffer.comSkype: asbidyarthyWhatsApp: +91 9717367468Telegram: @asbidyarthy We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. 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# Article bctech2026: Text Summarizing Tool to scrape and summarize pubmed medical papers  - Blackcoffer Insights

Healthcare AI ChatBot using LLAMA, LLM, Langchain Efficient Supply Chain Assessment: Overcoming Technical Hurdles for Web Application Development Streamlined Integration: Interactive Brokers API with Python for Desktop Trading Application Efficient Data Integration and User-Friendly Interface Development: Navigating Challenges in Web Application Deployment AI Chatbot using LLM, Langchain, LLama AI Bot Audio to audio Methodology for ETL Discovery Tool using LLMA, OpenAI, Langchain Methodology for database discovery tool using openai, LLMA, Langchain Rising IT cities and its impact on the economy, environment, infrastructure, and city life by the year 2040. Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading medical R&D firm in the USA Industry Type: Medical Products & Services: R&D Organization Size: 10000+ An advanced AI tool designed specifically for doctors to assist them in retrieving answers to their queries. Powered by state-of-the-art AI technologies, including web scraping and ChatGPT, The AI Assistant aims to streamline information retrieval and provide valuable insights to professionals. This AI Assistant leverages the capabilities of AI to facilitate seamless and efficient access to knowledge and information. It combines web scraping techniques to gather relevant data from trusted sources with ChatGPT and PubMed, providing accurate responses to doctors’ queries. Query Retrieval: AI Assistant utilizes web scraping techniques to fetch information from credible websites, academic journals, medical databases, and other trusted sources. It provides doctors with immediate access to a vast array of knowledge and resources. Benefits: Time Efficiency: By quickly retrieving information and answering queries, AI Assistant saves valuable time for doctors, allowing them to focus more on patient care and critical tasks. Access to Knowledge: AI Assistant grants doctors easy access to a vast repository of knowledge, ensuring they stay updated with the latest research, treatment guidelines, and best practices. Decision Support: The tool provides valuable insights and recommendations, assisting doctors in making informed decisions about diagnosis, treatment plans, and patient management. To address this problem, we will build a web scraping tool that uses Python libraries such as BeautifulSoup, Selenium, and OpenAI’s GPT-3. The program will work as follows: The implementation of our web scraping and summarization tool has had significant positive impacts on our business operations. Firstly, it has streamlined our research process by automating the extraction of crucial information from various online sources. This has saved us considerable time and effort, allowing us to focus on more complex tasks. Secondly, the summarization feature has improved our understanding of the information we collect. By reducing large volumes of text down to a few key points, we’ve been able to quickly grasp the main ideas and insights presented in the articles, videos, and user comments. Thirdly, the tool has enabled us to stay up-to-date with the latest advancements in the field of orthopedics. By pulling data from recent articles on PubMed.gov, we’ve been able to stay informed about the latest research and treatments. Finally, the tool has facilitated the creation of comprehensive case reports. These reports have been instrumental in our ability to present detailed and accurate information to our clients, thereby enhancing our reputation and credibility in the industry. Overall, the implementation of this tool has greatly improved our efficiency and effectiveness, contributing significantly to our business success Link: https://www.loom.com/share/535828aad7184c1b82db707dcca8e52c?sid=c79d19b1-b963-45a1-bec5-6228cc753cc2 Summarized: https://blackcoffer.com/ This project was done by the Blackcoffer Team, a Global IT Consulting firm. This solution was designed and developed by Blackcoffer TeamHere are my contact details:Firm Name: Blackcoffer Pvt. Ltd.Firm Website: www.blackcoffer.comFirm Address: 4/2, E-Extension, Shaym Vihar Phase 1, New Delhi 110043Email: ajay@blackcoffer.comSkype: asbidyarthyWhatsApp: +91 9717367468Telegram: @asbidyarthy We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. Contact us: hello@blackcoffer.com © All Right Reserved, Blackcoffer(OPC) Pvt. Ltd

# Article bctech2027: 7up7down, 10upDown, Snakes and Ladder Games built using OOPs - Blackcoffer Insights

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# Article bctech2028: Data Studio Dashboard with a data pipeline tool synced with Podio using custom Webhooks and Google Cloud Function - Blackcoffer Insights

Healthcare AI ChatBot using LLAMA, LLM, Langchain Efficient Supply Chain Assessment: Overcoming Technical Hurdles for Web Application Development Streamlined Integration: Interactive Brokers API with Python for Desktop Trading Application Efficient Data Integration and User-Friendly Interface Development: Navigating Challenges in Web Application Deployment AI Chatbot using LLM, Langchain, LLama AI Bot Audio to audio Methodology for ETL Discovery Tool using LLMA, OpenAI, Langchain Methodology for database discovery tool using openai, LLMA, Langchain Rising IT cities and its impact on the economy, environment, infrastructure, and city life by the year 2040. Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading retail firm in the USA Industry Type: Retail Products & Services: Retail Business, e-commerce Organization Size: 300+ The client needs a consolidated KPI dashboard that aggregates data from various applications and SaaS products. Currently, the data is scattered across different platforms, making it difficult to track key performance indicators (KPIs) effectively. The client wants a dashboard that automatically updates with new data, eliminating the need for manual updates. The dashboard should contain separate tabs for current week sales, tickets, customer satisfaction, leads, conversion, company records, and finances. Additionally, the client wants to use Google Cloud Functions to sync data regularly between the Podio data app and Google Sheets. The proposed solution involves the creation of a KPI dashboard in Google Sheets, which will serve as a central hub for all the client’s data. This dashboard will be populated with data from various sources, including Google Sheets and the Podio data app. The data will be organized into separate tabs, each representing a different aspect of the business. The dashboard will be designed to automatically update with new data, removing the need for manual updates. The process begins with obtaining access to the data in Google Sheets. Once the data is accessed, a list of KPIs to be visualized will be prepared. The data from Google Sheets will then be connected to the Google Data Studio dashboard for visualization. The dashboard will be designed to align with the client’s goals, prioritizing the most important KPIs and positioning them at the top of the dashboard. The dashboard will also be protected to prevent further or accidental changes, ensuring that data can only be added or changed through designated data sheets. Collaborators will be invited via email, with specific roles assigned to ensure effective collaboration. The dashboard will be customized with brand-aligned colors and fonts to enhance its appearance and authority. In addition to the dashboard, webhooks will be created for the Podio data app deployed as a Google Cloud Function. This will enable regular data synchronization between the Podio data app and Google Sheets, ensuring that the dashboard is always up-to-date with the latest data. The implementation of the proposed solution has significantly improved the client’s ability to track and manage key performance indicators (KPIs). Prior to the solution, the client was struggling with data fragmentation across different SaaS products and applications, which made it difficult to compile comprehensive insights. The KPI dashboard, now consolidated in Google Sheets, has streamlined this process, providing a unified view of the business metrics. This solution has also automated the data update process, saving valuable time and resources that were previously spent on manual updates. The automatic update feature has allowed the client to focus on analyzing the data rather than spending hours updating it. Additionally, the integration of the Podio data app with Google Sheets via Google Cloud Functions has improved data synchronization efficiency. Regular data synchronization ensures that the KPI dashboard is always up-to-date, providing real-time insights into the business performance. These improvements have led to enhanced decision-making processes within the client’s organization. With accurate and timely data, managers can now set and achieve goals more effectively. The consolidation of data has also facilitated cross-departmental collaboration, as teams can now access and share data easily. Overall, the solution has resulted in significant business impact, leading to improved operational efficiency, informed decision-making, and strategic planning https://lookerstudio.google.com/u/3/reporting/da134941-6efc-43e4-9b2a-37b7a6aab1b0/page/p\_kfrjaxka8c/edit https://console.cloud.google.com/welcome?authuser=1&project=t4a-dashboard Summarized: https://blackcoffer.com/ This project was done by the Blackcoffer Team, a Global IT Consulting firm. This solution was designed and developed by Blackcoffer TeamHere are my contact details:Firm Name: Blackcoffer Pvt. Ltd.Firm Website: www.blackcoffer.comFirm Address: 4/2, E-Extension, Shaym Vihar Phase 1, New Delhi 110043Email: ajay@blackcoffer.comSkype: asbidyarthyWhatsApp: +91 9717367468Telegram: @asbidyarthy We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. Contact us: hello@blackcoffer.com © All Right Reserved, Blackcoffer(OPC) Pvt. Ltd

# Article bctech2029: End-to-end tool to optimize routing and planning of field engineers using Google’s CVRP-TW algorithm - Blackcoffer Insights

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Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading hardware firm in the USA Industry Type: IT Products & Services: IT Consulting, Support, Hardware Installations Organization Size: 300+ The client specializes in installing blinds and related products in customers’ homes. They are currently struggling with scheduling appointments efficiently due to a variety of factors such as location, installation duration, team member availability, and customer preferences. We need a tool that can suggest optimal schedules based on these criteria and adapt to changes as customers approve or reject proposed appointment times. The goal is to create a proof of concept for a route and job planning model that can potentially streamline our scheduling process and make a significant impact on our business operations. The To address this challenge, we propose developing a proof of concept for a route and job planning model. This model will be based on the concept of Constrained Vehicle Routing Problem with Time Windows (CVRP-TW), a well-established approach in operations research and logistics. The model will take a dataset, which could be extracted from a Google sheet or converted from a CSV file, and generate optimal schedules. The development process will involve several stages: In terms of technology, we’ll use Python, a popular language for data analysis and machine learning. We’ll also use the Anaconda distribution, which provides a powerful environment for scientific computing and data analysis. Implementing an efficient route and job planning model had a significant positive impact on our business operations. By automating the scheduling process, we were able to reduce manual errors and streamline our workflow, resulting in quicker response times and deliveries. This not only improved our operational efficiency but also enhanced our ability to provide better service to our customers. Moreover, the model allowed us to maximize each driver’s productivity by optimizing routes, which led to cost savings in fuel and vehicle maintenance. The automated nature of the system also enabled us to make real-time adjustments to the route in response to last-minute orders or unexpected situations, such as a driver being unavailable. The model also provided us with valuable insights into our operations, allowing us to identify bottlenecks and areas for improvement. This helped us to proactively address potential issues and continuously enhance our processes, thereby increasing our overall business performance. As a result of these improvements, we were able to attract more skilled workers by focusing on cutting down unskilled labor. This shift towards more automation allowed us to invest more in our workforce, leading to higher employee satisfaction and retention rates. Lastly, the successful implementation of the route and job planning model has opened up new opportunities for our business. With the ability to efficiently cover our market and manage our resources effectively, we have been able to consider expanding our territory by entering new markets. This strategic route planning has helped us determine whether we need to acquire more vehicles or hire more operators before moving, providing a clear pathway for future growth. https://docs.google.com/spreadsheets/d/1kS7Em9NitvMD\_49MoLCpt\_KoPJGGIAGjCES\_KI8rEQk/edit?userstoinvite=raymondchow%40stanbondsa.com.au#gid=766964619 Summarized: https://blackcoffer.com/ This project was done by the Blackcoffer Team, a Global IT Consulting firm. This solution was designed and developed by Blackcoffer TeamHere are my contact details:Firm Name: Blackcoffer Pvt. Ltd.Firm Website: www.blackcoffer.comFirm Address: 4/2, E-Extension, Shaym Vihar Phase 1, New Delhi 110043Email: ajay@blackcoffer.comSkype: asbidyarthyWhatsApp: +91 9717367468Telegram: @asbidyarthy We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. Contact us: hello@blackcoffer.com © All Right Reserved, Blackcoffer(OPC) Pvt. Ltd

# Article bctech2030: End-to-end tool to predict Biofuel prices using IESO data - Blackcoffer Insights

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Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading tech firm in the USA Industry Type: IT Products & Services: IT Consulting, Software Development Organization Size: 100+ The task involves creating an end-to-end data pipeline to extract data from various reports, store it in a Google Cloud Platform (GCP) database, build a dashboard, and develop a machine learning model for price forecasting. The data is pulled from different links, each having a slightly different report layout, with some being in CSV and others in XML format. The goal is to extract data daily and hourly for the past three years. The extracted data is intended to be used for building a dashboard and training/testing a model based on user-defined inputs on the dashboard. The challenge lies in handling the varied formats of the data, ensuring accurate extraction, and maintaining the integrity of the data throughout the pipeline. To solve this problem, we will use Python, along with libraries such as pandas and BeautifulSoup, to scrape data from various report links. The scraped data is stored in dataframes and then loaded into Google Cloud Storage buckets. This data is then transferred to BigQuery tables for efficient processing. The data extraction process is automated with a Cronjob/Google Cloud Scheduler. For the machine learning part, we will build and run various machine learning models in GCP’s BigQuery to predict future fuel/energy prices. We will test LSTM univariate/multivariate, GRU for time series problems, and ANN Regressor, Random Forests regression for regression problems. The ANN regression model will provide the best results for our use case. After modeling, we will generate a data visualization report on Google Data Studio for further insights. The report includes a pie chart about the distribution of fuel generated by each fuel type, a stacked column chart about the distribution of fuel generated each month, and a time series visualization of fuel generation during each quarter of the year. The successful implementation of the end-to-end data pipeline project had several significant business impacts. Firstly, it led to improved data quality and accessibility. The project streamlined the process of data extraction from various sources, ensuring that the data was clean, consistent, and readily available for analysis. This resulted in more reliable and accurate predictions, leading to better decision-making and strategic planning. Secondly, the project enhanced operational efficiency. By automating the data extraction process with a Cronjob/Google Cloud Scheduler, the team saved considerable time and effort. This allowed the team to focus on more strategic tasks, thereby increasing productivity. Thirdly, the project facilitated informed decision-making. The dashboard built on Google Data Studio provided users with real-time insights into fuel consumption patterns and energy prices. This helped stakeholders make informed decisions regarding energy usage and pricing strategies. Lastly, the project demonstrated the company’s commitment to leveraging advanced technologies for business growth. The use of Google Cloud Platform, BigQuery, and Google Data Studio showcased the company’s ability to innovate and stay competitive in the rapidly evolving digital landscape. Overall, the project had a positive impact on the company’s operations, decision-making processes, and reputation among stakeholders. It underscored the importance of data-driven decision making and highlighted the potential benefits of investing in advanced technologies. https://console.cloud.google.com/compute/instances?authuser=1&project=ieso&pli=1 Summarized: https://blackcoffer.com/ This project was done by the Blackcoffer Team, a Global IT Consulting firm. This solution was designed and developed by Blackcoffer TeamHere are my contact details:Firm Name: Blackcoffer Pvt. Ltd.Firm Website: www.blackcoffer.comFirm Address: 4/2, E-Extension, Shaym Vihar Phase 1, New Delhi 110043Email: ajay@blackcoffer.comSkype: asbidyarthyWhatsApp: +91 9717367468Telegram: @asbidyarthy We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. 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# Article bctech2031: ETL Discovery Tool using LLMA, Langchain, OpenAI - Blackcoffer Insights

Healthcare AI ChatBot using LLAMA, LLM, Langchain Efficient Supply Chain Assessment: Overcoming Technical Hurdles for Web Application Development Streamlined Integration: Interactive Brokers API with Python for Desktop Trading Application Efficient Data Integration and User-Friendly Interface Development: Navigating Challenges in Web Application Deployment AI Chatbot using LLM, Langchain, LLama AI Bot Audio to audio Methodology for ETL Discovery Tool using LLMA, OpenAI, Langchain Methodology for database discovery tool using openai, LLMA, Langchain Rising IT cities and its impact on the economy, environment, infrastructure, and city life by the year 2040. Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading retail firm in the USA Industry Type: Retail Products & Services: Retail Business, e-commerce Organization Size: 100+ To develop an ETL discovery tool that can answer the queries related to ETL pipelines in conversational format. The areas of the concerned queries should include Environment Analysis, Workflow Analysis, Data Source and Target Mapping, Transformation Logic, Data Volume and Velocity, Error Handling and Logging and Security and Access Control. In developing our solution, we began by aggregating Open-Source Generic ETL Tool Code from various repositories on GitHub and other relevant sources. Subsequently, we meticulously fine-tuned the collected ETL tool code, organizing and saving it into distinct folders, each containing different ETL pipelines. Following this, we implemented an OpenAI Assistant, integrating it with all the refined ETL pipelines. To facilitate communication with these pipelines, we employed the OpenAI Assistant ID within our Flask API. For the user interface, we opted for a Streamlit front-end, providing a seamless and user-friendly interaction with our OpenAI Assistant and the integrated ETL pipelines. ETL Discovery Tool serves as the core engine for Extract, Transform, and Load (ETL) operations. It is designed to handle data extraction, transformation, and loading tasks efficiently. It will be used for training the OpenAI model on the ETL Discovery tools. Step 1. Open-Source Generic ETL Tool Code: The Open-Source Generic ETL Tool serves as the core engine for Extract, Transform, and Load (ETL) operations. It is designed to handle data extraction, transformation, and loading tasks efficiently. It will be used for training the OpenAI model on the ETL Discovery tools. Step 2. Data Cleaning: Data Cleaning is a critical stage that involves cleansing and pre-processing raw data to enhance its quality and integrity. In this step the ETL understands the expected data format that is organized and cleaned for uniformity of data. Step 3. Files/DB Represents the storage or databases utilized for storing processed data. In this step, solutions for processed data the code files will be arranged and catalogued so that they are ready to be used by the OpenAI Assistants API. Step 4. OpenAI Assistant Creation via API: This step involves creating an OpenAI Assistant using the OpenAI API. Step 5. OpenAI Assistant: In this step, the Assistant that is created from previous step will be queried by the API with instructions for the context accommodation. Step 6. Django/Flask/FastAPI API: This step involves setting up an API using popular frameworks like Django, Flask, or FastAPI. Step 7. Chat Frontend (Streamlit): Represents the user interface for interacting with the system, built using Streamlit. Finding the ETL pipelines and fine tuning the ETL pipelines Our approach to overcoming technical challenges involved an extensive internet search focused on ETL pipelines. We scoured various online resources, eventually identifying the most effective ETL pipelines available on GitHub. To address each challenge systematically, we created individual files for each ETL pipeline. In the process, we meticulously fine-tuned and optimized each pipeline, documenting the specific tasks and functions within the respective files. This approach allowed us to provide detailed descriptions of the work performed for every ETL pipeline, ensuring a comprehensive understanding of the solutions implemented to tackle the technical hurdles encountered. The business impact was substantial as the client efficiently analysed numerous ETL tool pipelines. Instant answers in a chat format replaced the time-consuming manual work that could take Data Engineers days or weeks. This streamlined process significantly enhanced productivity and responsiveness, reflecting a tangible improvement in operational efficiency for the client. Assistant\_creator.py Main.py Project Demo Video link:- https://www.loom.com/share/5ee7d0835412474ea4aa3383af5a0814?sid=999739fc-e91a-4cda-a30e-9cd02957205f Part 1 (Backend):- https://www.loom.com/share/338c4e09c90e453e83b86050d469d98b?sid=03299e7a-0699-464e-be2c-689a409ec01e Part 2 (Frontend):- https://www.loom.com/share/8e7942f3a03e49889c6c70fba77f76b0?sid=eca0586f-b767-45fa-854d-853bca1890dc Summarized: https://blackcoffer.com/ This project was done by the Blackcoffer Team, a Global IT Consulting firm. This solution was designed and developed by Blackcoffer TeamHere are my contact details:Firm Name: Blackcoffer Pvt. Ltd.Firm Website: www.blackcoffer.comFirm Address: 4/2, E-Extension, Shaym Vihar Phase 1, New Delhi 110043Email: ajay@blackcoffer.comSkype: asbidyarthyWhatsApp: +91 9717367468Telegram: @asbidyarthy We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. Contact us: hello@blackcoffer.com © All Right Reserved, Blackcoffer(OPC) Pvt. Ltd

# Article bctech2032: GPT/OCR API - Blackcoffer Insights

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# Article bctech2033: Dockerize the AWS Lambda for serverless architecture - Blackcoffer Insights

Healthcare AI ChatBot using LLAMA, LLM, Langchain Efficient Supply Chain Assessment: Overcoming Technical Hurdles for Web Application Development Streamlined Integration: Interactive Brokers API with Python for Desktop Trading Application Efficient Data Integration and User-Friendly Interface Development: Navigating Challenges in Web Application Deployment AI Chatbot using LLM, Langchain, LLama AI Bot Audio to audio Methodology for ETL Discovery Tool using LLMA, OpenAI, Langchain Methodology for database discovery tool using openai, LLMA, Langchain Rising IT cities and its impact on the economy, environment, infrastructure, and city life by the year 2040. Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading tech firm in the USA Industry Type: IT & Consulting Products & Services: IT Solutions, Software Development Organization Size: 100+ AWS Lambda, a powerful serverless compute service, faces limitations in terms of runtime customization, dependency management, and execution environment isolation. To overcome the challenges mentioned above, we propose a comprehensive solution that involves Dockerizing AWS Lambda functions for improved flexibility, control, and efficiency within a serverless architecture. Below is a high-level architecture diagram: Key Components: Some of the key deliverables:  Dockerfile: A Dockerfile in the root of your Lambda function project, specifying the instructions to build the Docker image. This file includes the base image, installation of dependencies, copying of Lambda function code, and setting the handler function. Docker Image: The Docker image built from the Dockerfile. This image encapsulates your Lambda function code and its dependencies. Pushed Image to ECR: The Docker image pushed to your Amazon Elastic Container Registry (ECR) repository. This involves tagging the image with the ECR repository URI and pushing it to the repository. Updated Lambda Function Configuration: The Lambda function configuration was updated to use the Docker image from ECR. This may involve specifying the ECR URI in the Lambda configuration. Documentation:  Documentation outlining the steps to Dockerize the Lambda function and push it to ECR. This documentation should include prerequisites, step-by-step instructions, and any additional considerations. Challenge: AWS Lambda imposes constraints on runtime dependencies, making it challenging to manage and control library versions. Challenge: AWS Lambda’s managed environment may lack certain runtime configurations and isolation. Challenge: Efficiently capturing and analyzing performance metrics and logs from Dockerized Lambda functions. Solution: Use a containerization approach to package dependencies along with the Lambda function, providing better control and isolation. Implement a robust dependency management system within the Docker container. Solution: Docker containers offer enhanced isolation. Utilize containers to encapsulate the Lambda function and its dependencies, ensuring consistent execution environments. Solution: Integrate AWS CloudWatch for basic monitoring.  Dockerizing a Lambda Function: https://www.loom.com/share/e90438538dbb43fd884a51dab6c175e9?t=586&sid=b2e4112e-16b9-4d78-a955-77a289453e59 Summarized: https://blackcoffer.com/ This project was done by the Blackcoffer Team, a Global IT Consulting firm. This solution was designed and developed by Blackcoffer TeamHere are my contact details:Firm Name: Blackcoffer Pvt. Ltd.Firm Website: www.blackcoffer.comFirm Address: 4/2, E-Extension, Shaym Vihar Phase 1, New Delhi 110043Email: ajay@blackcoffer.comSkype: asbidyarthyWhatsApp: +91 9717367468Telegram: @asbidyarthy We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. Contact us: hello@blackcoffer.com © All Right Reserved, Blackcoffer(OPC) Pvt. Ltd

# Article bctech2034: Design and develop a product recommendation engine based on the features of products - Blackcoffer Insights

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# Article bctech2035: Database Discovery Tool using OpenAI - Blackcoffer Insights

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# Article bctech2036: Automate the Data Management Process - Blackcoffer Insights

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Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading tech firm in the USA Industry Type:  IT Services: SaaS, Products Organization Size: 100+ Businesses now have more access to data than ever before in today’s digital economy. This information is utilised to make key business choices. Businesses should invest in data management systems that increase visibility, dependability, security, and scalability to ensure that workers have the required data for decision-making. The client wanted to get the data management process automated using a tool from Python. Multiple operations like merging,sorting, filtering had to be performed on data from various resources. The data resources were mainly csv files and data from SQL queries in PostgreSQL.  The project solution contained two tools that would aid in automatic efficient data storage. The first tool will concatenate all of the CSV files before merging them with the data from the SQL file. The acquired Excel file will be used as input for the second tool. The second tool will sort, filter, and lookup the Excel file received in the first tool. This tool will add columns that will be useful for the client’s analysis. The major goal is to assist the client with data management while requiring as little manual labour as possible. The files obtain the needed data in an Excel file by giving the proper input files. The project deliverables can be divided into two parts: Two types of databases were used: Google excel sheets and PostgreSQL. Some minor challenges were faced such as data discrepancies generated during the automation process.   The challenges were solved by reworking on the automation tool and consulting with the clients for their requirements.  It is critical to use appropriate data management procedures to ensure the smooth running of a firm. Furthermore, data management must be very precise, cost-effective, and completed as soon as possible. The inability to handle data can result in costly consequences and a permanent stain on the company’s image. Every company is responsible for developing a robust data management plan. The following are some of the reasons why data management is critical to the success of the firm. Instant Availability of Information: Data management makes information easily available for quick access based on company needs. Data management is also essential for accounting procedures like auditing and other strategy-based operations like company planning. The more time you spend hunting for misplaced files and missing documents, the less productive you will be. And you are aware that time is money. Keeping all of your documents structured might therefore assist to make procedures run more smoothly and quickly. Compliance: The government passed legislation requiring businesses to maintain these data. There are also periodical checks to verify that there is no manipulation. Furthermore, if a corporation is involved in a dispute, they must maintain these records for years until a solid verdict on the matter is reached. Faster Transitions to New Technology: Because technology trends change so quickly, organizations must embrace whatever comes their way. Losing information due to obsolete or outdated systems is the last thing you want for your company. Every piece of data preserved in the firm records is essential for everyday operations, managing multiple divisions, completing computations, audits, and so on. Make Right Business Decisions: Businesses use a variety of information sources for company planning, trend research, and performance management. To execute the same activity, different departments’ teams employ different sources of information. Because the legitimacy and precision of information are highly dependent on the source, analyzing several sources may have a detrimental influence on the organization. Robust data management prevents this from happening. Fig.1: Python code of Exceltool1 Fig.2: Python code of Exceltool1 Here are my contact details: Email: ajay@blackcoffer.com Skype: asbidyarthy WhatsApp: +91 9717367468 Telegram: @asbidyarthy  For project discussions and daily updates, would you like to use Slack, Skype, Telegram, or Whatsapp? Please recommend, what would work best for you. 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# Article bctech2037: Realtime Kibana Dashboard for a financial tech firm - Blackcoffer Insights

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Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading fintech firm in the USA Industry Type: Finance Services: Financial services Organization Size: 100+ Create a real-time Kibana dashboard to monitor the real-time movement and activities related to company/stock on the AWS to analyse data and get insights through dashboards to prevent due diligence. Dashboard should include visualizations of sentiments, FOIA requests, stock prices, volume, borrow rate, etc. Create real-time dashboards to get insights about the data and to analyse the relative change in different activities. Someone filing FOIA SEC request or FOIA FDA request and/or registering for conference calls might also have posted some negative tweets on tweeter to influence the market. Dashboard should display data of requests, sentiments, stock prices, etc on the same timeline, so that we will be able to observe the changes and relative changes with respect to time. Make separate dashboard for 2 stock symbols to analyse the activities and changes specific to that and a dashboard for all the data, eg. stocks, requests, etc. Change in sentiments effecting the price of the stock, borrow rate, trading volume, etc. should be noticeable. There is a list of names, make alert on the dashboard when the requests are filed by them on the same timeline used for other data. Also include the candlestick chart to view the stock details like open, close, high, low, volume with respect to time.  For FOIA SEC and FDA requests, made a metric chart representing the total number of requests and requesters, created a date histogram to view the frequency of requests and requesters with respect to time, bar chart to view the top requester name, organization, category, pie chart to view the proportion of final disposition of requests and tag cloud for the description of the requests for the entries present in the selected time range and a search table that contains the selected columns (only relevant ones) for both SEC filings and FDA filings. Similarly, for citation data, created a date histogram to view the frequency of citations and names of firms who posted with respect to time and bar chart to view number of citations by firm in the selected time range and a search table that contains the selected columns (only relevant ones). Index containing fail to deliver data is used to plot the date histogram in which volume failed is represented by the bar along the line representing the price at that time, bar chart where bars represents the total volume failed to deliver with respect to stock symbol and average price of the stock symbol in the selected time range by a dot size add on and tag cloud of the stock symbol as per fail to delivers. For twitter data (short seller’s data), made a pie chart to show the proportion of polarity, metric table to show the highest 10 average retweets with respect to user name, made a date histogram to show the frequency of tweets as per time and another date histogram representing the amount of positive and negative sentiments with the help of bars as per time to leverage us to observe if change in amount of sentiments is affecting price of stock, volume in trade and fail to deliver, etc., bar chart to show the total posts and number of posts in the selected time range and another bar chart to show the count of followers and friends in the index in selected time range. A search table is made with columns like polarity, follower counts, retweets and post with timestamp to get precise info of what we have in visualizations. For the list of names to be tracked on requests made and to make alert for them, added a annotation on the TSVB graph and added all of these along with the above visualizations on the dashboard on Kibana to make it a real-time dashboard and we can use this dashboard to do relative analysis. For the dedicated dashboards to the stock, created and added following visualizations: 3 dashboards- 1 dashboard for complete data and 2 dashboards dedicatedly for one stock each.  Kibana and Elasticsearch Visualizations and analytical skills were used Following databases are used to: AWS Management Console As I was using Kibana and studying the stock data for the first time, I faced challenges in making complex visualizations and understanding the terms related to stock data. Using filters while making Vega Charts to make candlestick chart with inconsistent data was displeasing. Challenges related to the creation of complex visualization was solved exploring options on the Kibana and getting reference from the online sources. In order to understand the stock information and how things work, I got immense amount of knowledge from the client and from my project manager. For filtering of data in Vega charts I took help from the online sources. Here are my contact details: Email: ajay@blackcoffer.com Skype: asbidyarthy WhatsApp: +91 9717367468 Telegram: @asbidyarthy  For project discussions and daily updates, would you like to use Slack, Skype, Telegram, or Whatsapp? Please recommend, what would work best for you. We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. 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# Article bctech2038: Data Management, ETL, and Data Automation - Blackcoffer Insights

Healthcare AI ChatBot using LLAMA, LLM, Langchain Efficient Supply Chain Assessment: Overcoming Technical Hurdles for Web Application Development Streamlined Integration: Interactive Brokers API with Python for Desktop Trading Application Efficient Data Integration and User-Friendly Interface Development: Navigating Challenges in Web Application Deployment AI Chatbot using LLM, Langchain, LLama AI Bot Audio to audio Methodology for ETL Discovery Tool using LLMA, OpenAI, Langchain Methodology for database discovery tool using openai, LLMA, Langchain Rising IT cities and its impact on the economy, environment, infrastructure, and city life by the year 2040. Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading tech firm in the USA Industry Type:  IT Services: SaaS, Products Organization Size: 100+ To extract the data for the given keywords from the listed websites https://www.ferguson.com/, https://www.bakerdist.com/, https://www.hajoca.com/, https://www.carrier.com/residential/en/us/, https://www.gemaire.com/, https://www.fwwebb.com/ and store the count of each keywords for each website it in an Excel File. A list of websites is provided from which we were supposed to find out the mentioned keywords and store their respective counts for each website in an Excel sheet with different tabs for different set of keywords. We used Selenium as well as Bs4(Beautiful Soup) to extract data from the given websites. To accomplish the given task, 2 tools were developed for each website. Extracted content from all the websites was stored in their respective text files. After that number of keywords in the text were counted using substring and count method and stored the keyword and its corresponding count in an Ordered Dictionary and then the count was transferred to a list and Excel file was created for the same. Counts received from search tool and content tool were combined and final output file was created. Python Interpreter Language Used: Python Libraries used: BeautifulSoup, collection.OrderedDict, pandas, requests, xlsxwriter, selenium.webdriver Some of the websites cannot be accessed using Indian IP address as it was having captchas. Also, we cannot go to each and every page by clicking the results and get the count. To bypass the captcha and reach the website, we need to use VPN of Singapore. And to get access to each and every page of the website, we found out sitemap for each website which includes link to every page present in it. Here are my contact details: Email: ajay@blackcoffer.com Skype: asbidyarthy WhatsApp: +91 9717367468 Telegram: @asbidyarthy  For project discussions and daily updates, would you like to use Slack, Skype, Telegram, or Whatsapp? Please recommend, what would work best for you. We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. Contact us: hello@blackcoffer.com © All Right Reserved, Blackcoffer(OPC) Pvt. Ltd

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# Article bctech2042: Design and develop retool app for wholecell.io and Asana data using their api’s - Blackcoffer Insights

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# Article bctech2043: Design and develop a retool app that will show stock and crypto related information using IEX API - Blackcoffer Insights

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# Article bctech2044: CRM (Monday.com, Make.com) to Data Warehouse to Klipfolio Dashboard - Blackcoffer Insights

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# Article bctech2045: NER Task using BERT with data in XML-format - Blackcoffer Insights

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# Article bctech2048: NLP-based Approach for Data Transformation - Blackcoffer Insights

Healthcare AI ChatBot using LLAMA, LLM, Langchain Efficient Supply Chain Assessment: Overcoming Technical Hurdles for Web Application Development Streamlined Integration: Interactive Brokers API with Python for Desktop Trading Application Efficient Data Integration and User-Friendly Interface Development: Navigating Challenges in Web Application Deployment AI Chatbot using LLM, Langchain, LLama AI Bot Audio to audio Methodology for ETL Discovery Tool using LLMA, OpenAI, Langchain Methodology for database discovery tool using openai, LLMA, Langchain Rising IT cities and its impact on the economy, environment, infrastructure, and city life by the year 2040. Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading tech firm in the USA Industry Type:  IT Services: SaaS, Products Organization Size: 100+ Performing Readability and Quality testing on the text corpus from text files The intention was to create a tool/system that can consume text files through a given csv file having a path for all the text files through this csv file our tool should be able to read all files one by one and could perform some tests and analysis on that text data and output the results in a csv format presenting all the metrics.  In order to achieve this goal we created a Python-based ready-to-use code that will read all text files presented in the given csv files and perform 14 different evaluations on that text data and save the results in a excel and csv based format. The final deliverable was the tool/system/code for processing and evaluation text. Python Programming The architecture of the solution for this project problem statement was simple, no challenges were faced during the execution of the project. Here are my contact details: Email: ajay@blackcoffer.com Skype: asbidyarthy WhatsApp: +91 9717367468 Telegram: @asbidyarthy  For project discussions and daily updates, would you like to use Slack, Skype, Telegram, or Whatsapp? Please recommend, what would work best for you. We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. Contact us: hello@blackcoffer.com © All Right Reserved, Blackcoffer(OPC) Pvt. Ltd

# Article bctech2049: An ETL tool to pull data from Shiphero to Google Bigquery Data Warehouse - Blackcoffer Insights

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# Article bctech2052: Data from CRM via Zapier to Google Sheets (Dynamic) to PowerBI - Blackcoffer Insights

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# Article bctech2076: Building a Physics-Informed Neural Network for Circuit Evaluation - Blackcoffer Insights

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# Article bctech2081: Return on Advertising Spend Dashboard: Marketing Automation and Analytics using ETL and Dashboard - Blackcoffer Insights

Healthcare AI ChatBot using LLAMA, LLM, Langchain Efficient Supply Chain Assessment: Overcoming Technical Hurdles for Web Application Development Streamlined Integration: Interactive Brokers API with Python for Desktop Trading Application Efficient Data Integration and User-Friendly Interface Development: Navigating Challenges in Web Application Deployment AI Chatbot using LLM, Langchain, LLama AI Bot Audio to audio Methodology for ETL Discovery Tool using LLMA, OpenAI, Langchain Methodology for database discovery tool using openai, LLMA, Langchain Rising IT cities and its impact on the economy, environment, infrastructure, and city life by the year 2040. Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading ad firm in India Industry Type:  Ads Services: Ads, Marketing, and Promotions Organization Size: 100+ The main problem that was addressed in this project was the manual calculation of Return on Advertising Spend (ROAS) due to the lack of a centralized platform for running ads. The client’s ads were spread across multiple revenue generating platforms, including Google Adsense, Adx, and Ezoic, while the spending was managed through the Google Ads Platform. At that time, the client lacked a centralized dashboard or website that could effectively calculate ROAS by integrating revenue and cost streams. This fragmentation made it challenging for the client to track and evaluate the effectiveness of their advertising campaigns. Therefore, a comprehensive solution was developed and implemented, providing a centralized platform for calculating ROAS, aligning revenue and cost data from various sources, and enabling informed decision-making regarding advertising investments.  We developed a comprehensive solution to address the challenges faced by the client in calculating Return on Advertising Spend (ROAS) and centralizing their advertising data. The solution involved collecting data from four different APIs: Google Ads API for spending data, Google Adsense API, Ad Manager API, and Ezoic data for revenue data. To ensure compatibility, we utilized an Extract, Transform, Load (ETL) tool to convert the data received from each API, which was in different formats, into a standardized format storing them Pandas Dataframe for both revenue and spending data. The transformed data was then stored in a Postgres database for easy access and management. To automate the data extraction process, we implemented an ETL script that runs twice daily via cronjob on a Digital Ocean VM, ensuring the latest data is always available. Moreover, we designed a backend API using the Flask framework. This API fetched the required data from the Postgres DB, allowing users to retrieve relevant information efficiently. Finally, we implemented a ROAS Dashboard frontend to display the calculated ROAS using the fetched values. The dashboard provided a visually appealing and intuitive interface for users to track and monitor their advertising performance. With our solution in place, the client could now easily monitor ROAS over time, access consolidated data, and make informed decisions regarding their advertising investments. The solution architecture involved a multi-step process to address the challenges faced by the client in calculating ROAS and centralizing their advertising data. Data was collected from various APIs, including Google Ads API, Google Adsense API, Ad Manager API, and Ezoic data, and transformed into a standardized format using an ETL tool.  The transformed data was stored in a Postgres database, and a backend API was developed using the Flask framework to fetch the required data. The calculated ROAS was then displayed on a Next Js Dashboard, providing users with an intuitive interface to track and analyze their advertising performance. Python 3.9 Flask API DigitalOcean Droplet Functional Programming in Python ETL Tool Python Git Deployment Data Engineering Web Development using Next js We used PostgreSQL database for the project. Digital Ocean Droplet Some of the technical challenges encountered were: 1. Ensuring data integrity: Implemented checks, cleansing, and validation to maintain the accuracy and reliability of the data. 2. Docker image deployment on VM: Configured VM to support Docker Image for ETL and deployed the image for seamless execution. 3. Setting up automated ETL pipeline: Automated data extraction, transformation, and loading processes for efficient data management via cronjob. 4. Adding SSL certificate to backend API: Secured backend API with SSL certificate, enabling encrypted communication for enhanced data protection. The implemented solution had a significant positive impact on the client’s business. By providing a centralized platform for calculating ROAS and integrating data from multiple revenue-generating platforms, the client gained valuable insights into the effectiveness of their advertising campaigns. The availability of real-time, consolidated data enabled informed decision-making regarding advertising investments. The user-friendly interface of the RAOS Dashboard allowed the client to easily track and monitor their advertising performance, leading to improved campaign optimization and potentially higher returns on advertising spend. Overall, the solution streamlined the client’s advertising operations, resulting in increased efficiency and improved business outcomes. Here are the project snapshots: https://roasing.com/ We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. Contact us: hello@blackcoffer.com © All Right Reserved, Blackcoffer(OPC) Pvt. Ltd

# Article bctech2082: Ranking customer behaviours for business strategy - Blackcoffer Insights

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# Article bctech2083: Algorithmic trading for multiple commodities markets, like Forex, Metals, Energy, etc. - Blackcoffer Insights

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# Article bctech2084: Trading Bot for FOREX - Blackcoffer Insights

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# Article bctech2085: Python model for the analysis of sector-specific stock ETFs for investment purposes - Blackcoffer Insights

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# Article bctech2086: Medical Classification - Blackcoffer Insights

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# Article bctech2087: Design & Develop BERT Question Answering model explanations with visualization - Blackcoffer Insights

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# Article bctech2088: Design and develop solution to anomaly detection classification problems - Blackcoffer Insights

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# Article bctech2089: An ETL Solution for Currency Data to Google Big Query - Blackcoffer Insights

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# Article bctech2091: An agent-based model of a Virtual Power Plant (VPP) - Blackcoffer Insights

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# Article bctech2092: Transform API into SDK library and widget - Blackcoffer Insights

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# Article bctech2093: Integration of a product to a cloud-based CRM platform - Blackcoffer Insights

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# Article bctech2094: A web-based dashboard for the filtered data retrieval of land records - Blackcoffer Insights

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# Article bctech2095: Integration of video-conferencing data to the existing web app - Blackcoffer Insights

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# Article bctech2096: Design & develop an app in retool which shows the progress of the added video - Blackcoffer Insights

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# Article bctech2097: Auvik, Connectwise integration in Grafana - Blackcoffer Insights

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# Article bctech2098: Data integration and big data performance using Elasticsearch - Blackcoffer Insights

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# Article bctech2099: Web Data Connector - Blackcoffer Insights

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# Article bctech2100: An app for updating the email id of the user and stripe refund tool using retool - Blackcoffer Insights

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# Article bctech2101: An AI ML-based web application that detects the correctness of text in a given video - Blackcoffer Insights

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# Article bctech2102: Website Tracking and Insights using Google Analytics, & Google Tag Manager - Blackcoffer Insights

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Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading marketing firm in the USA Industry Type: Marketing Services: Consulting, Software, Marketing Solutions Organization Size: 400+ The project objectives are as follows:  This project includes assisting businesses with digital analysis for their marketing.Digital analytics allows you to stand back, get the big picture, and see what is working and what isn’t in your overall strategy so you can adjust. The importance of digital analytics is that it allows for a data-driven approach to marketing, and as such it can produce better results. The primary objective of the project is to help the businesses in knowing their target audience, understanding the trends in digital marketing, and providing insights on the analytics part of their website performance. Use the digital analytical data to determine if your business’ aims are in line with the customer’s wants and needs. As the picture of the customer’s needs unfolds, adjust the objectives accordingly.   The main aim of this project is to assist the businesses to improve their website performance with the use of technologies like Google Analytics, Google Tag Manager and dashboards built on Whatagraph.  Google Analytics:  Google Analytics is integral to tracking and measuring data from a number of digital platforms, but especially web metrics and customer behaviour. For example, through Google Analytics, you can see when people drop out of the buying process, perhaps they abandon while on the cart page, which would then inform your decisions on how to improve the check-out process. Because Google Analytics measures traffic from a variety of devices and sources and integrates with other online platforms, such as Google Ads, it is a handy tool to get an overview of your business’s digital analytics. Google Tag Manager: Google Tag Manager is a tag management system (TMS) that allows you to quickly and easily update measurement codes and related code fragments collectively known as tags on your website or mobile app. Once the small segment of Tag Manager code has been added to your project, you can safely and easily deploy analytics and measurement tag configurations from a web-based user interface. When Tag Manager is installed, your website or app will be able to communicate with the Tag Manager servers. You can then use Tag Manager’s web-based user interface to set up tags, establish triggers that cause your tag to fire when certain events occur, and create variables that can be used to simplify and automate your tag configurations.A Tag Manager container can replace all other manually-coded tags on a site or app, including tags from Google Ads, Google Analytics, Floodlight, and 3rd party tags.  Whatagraph Dashboards:  The whatgraph dashboards previews the important metrics related to the website including conversions, events, number of users and performance about ads and campaigns by the website. This dashboard helps in drawing some of the useful insights for the website notifying the strengths,gains and areas of improvement.  Main deliverables for the project are:  The main technical challenge faced was that any changes in Google Analytics are operational after 24 hrs. Thus, we can’t judge if the setup works as per required.  We had to wait for 24 hours to check the setup. We could use real-time report as well to check the setup on-the spot.  This analysis helps to improve website performance, understanding user behavior, understanding the impact of business campaigns and improvising the UI/UX to increase their potential users.  Having insight into your clients’ behaviour and demographics can help you make decisions about serving them the right products at the right time for maximum chances of a sale. Such data could include a client’s persona, such as their age, location, and areas of interest. Some of the common metrics that are important in digital analytics include: Dashboard metrics: Some examples are pages per visit, bounce rate, and average duration of each visit. Most exited pages: Pages with an exit rate of 75–100% show that you need to examine the problem with the content and improve upon it. Most visited pages: These pages will make the customers either exit or explore the website further. Referring websites: These are other websites that link to your website. Conversion rate: This indicates whether the goal of your website was achieved, be it a sale of a product, a free giveaway, or a subscription to a newsletter. Frequency of visitors: This tells you about the loyalty of the customers. Days to the last transaction: This refers to the time lapse between the first visit and the sale. The shorter the time taken, the better it is for your business. Figure 1: Google Tag Manager Domains Figure 2: Google Tags  Figure  3: Google Analytics  Figure 4: Google Analytics Figure 5: Tracking Facebook Pixels for a website Figure 6: Whatagraph dashboard Figure 7: Whatagraph Dashboard(Conversions)  We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. Contact us: hello@blackcoffer.com © All Right Reserved, Blackcoffer(OPC) Pvt. Ltd

# Article bctech2103: Dashboard to track the analytics of the website using Google Analytics and Google Tag Manager - Blackcoffer Insights

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Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A Automobile firm in India Industry Type: Automobile Services: Retail, Automobile Organization Size: 1000+ The project objectives are as follows:  This project includes assisting the client to study the user flow and behaviour flow of the users on the websites. It had one main website and three other sub websites to analyse the button clicks, impressions and understanding the user’s behaviour on the website. Many events were to be tracked and converted to a dashboard in Google Data Studio to make it simpler to understand.  This project was created to give this data in a way that companies can readily understand through the use of visualisations. The graphs will show the increase/decrease in any of the metrics, as well as the manner in which the increase/decrease occurs. It will display all of the crucial data monthly or even by date range to help you keep track of the changes that occur. The main aim of this project is to display the event flow, user flow and behaviour flow through dashboards and analyse them to work on the areas of improvements.  Google Analytics:  Google Analytics is integral to tracking and measuring data from a number of digital platforms, but especially web metrics and customer behaviour. For example, through Google Analytics, you can see when people drop out of the buying process, perhaps they abandon while on the cart page, which would then inform your decisions on how to improve the check-out process. Because Google Analytics measures traffic from a variety of devices and sources and integrates with other online platforms, such as Google Ads, it is a handy tool to get an overview of your business’s digital analytics. Google Tag Manager: Google Tag Manager is a tag management system (TMS) that allows you to quickly and easily update measurement codes and related code fragments collectively known as tags on your website or mobile app. Once the small segment of Tag Manager code has been added to your project, you can safely and easily deploy analytics and measurement tag configurations from a web-based user interface. When Tag Manager is installed, your website or app will be able to communicate with the Tag Manager servers. You can then use Tag Manager’s web-based user interface to set up tags, establish triggers that cause your tag to fire when certain events occur, and create variables that can be used to simplify and automate your tag configurations.A Tag Manager container can replace all other manually-coded tags on a site or app, including tags from Google Ads, Google Analytics, Floodlight, and 3rd party tags.  Google Data Studio Dashboards:  The dashboards preview the important metrics related to the websites using graphs, tables to understand the trends, patterns in the users.  The following steps were carried out for the project:  The main deliverable for this project were dashboards on Google Data Studio depicting important metrics related to website performance. There were three sub websites for which there were two types of views each. Each of the views had several buttons related to the product. The project was about finding the user flow and event flow on the views. The main technical challenge faced was that there were multiple events setup in Google Analytics for one event and thus identifying a particular one was difficult.  We had to communicate with the client to clarify about the event names. Although this took some time but it was necessary since accurateness of data is very essential for the project. This analysis helps to improve website performance, understanding user behavior, understanding the impact of business campaigns and improvising the UI/UX to increase their potential users.  Having insight into your clients’ behaviour and demographics can help you make decisions about serving them the right products at the right time for maximum chances of a sale. Such data could include a client’s persona, such as their age, location, and areas of interest. Some of the common metrics that are important in digital analytics include: Dashboard metrics: Some examples are pages per visit, bounce rate, and average duration of each visit. Conversion rate: This indicates whether the goal of your website was achieved, be it a sale of a product, a free giveaway, or a subscription to a newsletter. Source/Medium Analysis:  This analysis helps in understanding the traffic sources and medium on the website. This helps the businesses to work on strengthening the traffic sources to get better reach to the target audience. Traffic Analysis:  The overall traffic analysis for the website provides information regarding the important metrics like users,avg. session duration and goal completions according to different source/medium. This will help the  business to analyse different traffic channels performances. Figure 1: Tracking of Buttons for Triber Virtual Studio Figure 2: Triber Goal Conversions Figure 3: Kiger 360 Experience Website Tracking     Figure 4: Traffic Medium Analysis Figure 5: Overview of Dashboard Metrics Figure 6: Kiger Studio Experience Website Website URL:  https://www.renault.co.in/ Dashboard URL:  We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. Contact us: hello@blackcoffer.com © All Right Reserved, Blackcoffer(OPC) Pvt. Ltd

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# Article bctech2108: Incident Duration Prediction - Infrastructure and Real Estate - Blackcoffer Insights

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# Article bctech2110: Database Normalization & Segmentation with Google Data Studio Dashboard Insights - Blackcoffer Insights

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# Article bctech2112: Real-time dashboard to monitor infrastructure activity and Machines - Blackcoffer Insights

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Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading law firm in USA Industry Type:  Law Services: Law practice Organization Size: 40+ Local Service Ads is a newer program by Google that allows advertisers to achieve a “Google Guaranteed” status in search engines when a visitor makes a search. Advertisers who participate in Google Local Service Ads will receive a larger ad space with their competitor’s local services ads and they will be able to feature their local businesses throughout organic search queries.  There are various aspects that firms must concentrate on in order to win the Google services ad and so raise their ranking. These enhancements may be implemented if companies obtain current data about their leads and analyse it in order to take appropriate actions in the future. This project was created to give this data in a way that companies can readily understand through the use of visualisations. The graphs will show the increase/decrease in any of the metrics, as well as the manner in which the increase/decrease occurs. It will display all of the crucial data monthly or even by date range to help you keep track of the changes that occur. The solution for the project includes data insights through visualisations which will help businesses to better analyse the available data. This solution will help the businesses in improvising the factors to increase their potential customers and raise their respective ranks.  It is divided into two parts: databases and data dashboard. The databases will store the important data retrieved from the LSA dashboard and use them to calculate some important metrics. The data dashboard will represent those metrics in form of graphs and data in form of tables.  The project deliverables can be divided into two parts:  For extracting the data from the LSA Dashboard, we have made our own tool by python scripts. The automation tool will store data in the excel sheets and google bigquery for respective businesses on a day to day basis. PyCharm for compiling and running the code. JsonViewer for processing  We have used the LSA API to extract data from the LSA Dashboard. Google Sheets API to store data in excel sheets. Bigquery API for storing data in google bigquery. The scripts for the automation tool were written in the Python programming language.  Software Model: RAD(Rapid Application Development model) Model In the RAD paradigm, less emphasis is placed on planning and more emphasis is placed on development activities. It aims to create software in a short period of time. Advantages of RAD Model:  Two types of databases: Google excel sheets and google bigquery.  Google BigQuery Cloud Database with up to 1 TB of free storage is being used. Some minor technical challenges were faced for clients with minimum data. For those, plotting graphs became difficult.  We tried to process the data, remove the blank data spaces and plotted the graph with available data.  It’s undeniable that Google’s Local Services ads (LSA) have changed the way home service businesses advertise online. The pay per lead system designed to provide the end-user with a quick, clean and trusted experience, gives small and medium-sized businesses a better shot at competing with national brands and massive budget operations. To win with the Local Services the businesses need to take care of some factors where data comes to help.  Fig.1: Data Dashboard for individual businesses-1 Fig.2: Data Dashboard for individual businesses-2 Fig.3: Consolidated Dashboard Fig.4: Historical Account Data Fig.5: CPA and CPL datasheet Fig.6: Lead Dispute Status We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. Contact us: hello@blackcoffer.com © All Right Reserved, Blackcoffer(OPC) Pvt. Ltd

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# Article bctech2138: Splitting of Songs into its Vocals and Instrumental - Blackcoffer Insights

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# Article bctech2143: Google Local Service Ads (LSA) Data Warehouse - Blackcoffer Insights

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# Article bctech2146: Marketing Analytics to Automate Leads Call Status and Reporting - Blackcoffer Insights

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Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading financial institution in the USA Industry Type: Financial services & Consulting Services: Financial consultant Organization Size: 100+ >To process two json file stocktwits\_legacy\_msg\_2015\_10.txt (file size = 2 GB) & stocktwits\_legacy\_msg\_2015\_10.txt (file size = 3.5 GB). >To handle Nested Json for both files and after conversion into one merged Data Frame need to perform Data Structurization. >While accessing a Json file in JupyterNB, I need to perform Chunking as the file size is bigger and it is in json format to avoid PC standstill. >After Data Preprocessing I need to perform Exploratory Data Analysis on that Data. > Conditional Programming to deal with Data Transferring to a particular folder based on the column values. During the training period I was involved with 2 live projects, One project named ‘Stocktwits Data Structurization’ in which I have to process huge JSON Data which was already obtained the size of data was nearly 5 GB need to process the data by chunking with chunk size = 20000 rows at a time. The file has nested JSON data within it’s attributes so abstracts data from the nested columns into a new dataframe. Completed handling complex nested json formed columns abstracted from nested json. Then need to Handle the missing data by mapping it with another index dataset further missing values for certain attributes were handled by mean value and 0 substitution. This task involves numerous pandas operations along with multiple python functions. Further done Exploratory Data Analysis on the cleaned dataset finding correlation matrix and plotting certain seaborn graphs between strong correlated attributes. Worked on Accessing Json Data, done tree Analysis on Json Sample data. Both the File was too big for reading and applying some Python Code in JupyterNb, so performed chunking of stocktwits\_legacy\_messages\_2015\_10.txt  with chunk size = 20000 rows at a time. Similarly trying for the other file. Created a list of all the chunked files of Json Data & Concat all the files in that list. The File has Nested Json data within it’s attributes so abstracted data from the nested columns into a new DataFrame. Completed handling complex nested json formed columns abstracted from nested json. Renamed the columns with identification. (Eg: ‘id’ as ‘entities\_id’) likewise for others. So that while merging the data doesn’t create any issue. Completed forming Preprocessed csv file for 1st json file which  Output2015.csv. For Second file size was > 3gb so splitted the file into ten parts and then individually solved nested json for all these parts like done in the 1st file finally concat them into one, then handled columns arrangements and removed unwanted columns and finally removed dictionary representation from entity\_sentiments column. Completed forming Preprocessed csv file for 2nd json file which is Output\_Stocktwits\_2017.csv. The cleaned dataset finding correlation matrix and plotting certain seaborn graphs between strong correlated attributes. Further done Exploratory Data Analysis on the cleaned dataset finding correlation matrix and plotting certain seaborn graphs between strong correlated attributes. Conditional Programming to deal with Data Transferring to a particular folder based on the column values. ● Jupyter Notebook ● Anaconda ● Notepad++ ● Sublime Text ● Brackets ● JsonViewer ● Python Programming My project ‘Stocktwits Data Structurization’ developed with a software model which makes the project high quality, reliable and cost effective. ● Software Model : RAD(Rapid Application Development model) Model ● This project follows a RAD Model as our model is not forming the loop from end to the start, also my project was based on prototyping without any specific planning. In the RAD model, there is less attention paid to the planning and more priority is given to the development tasks. It targets developing software in a short span of time. ● Advantages of RAD Model: o Changing requirements can be accommodated. o Progress can be measured. o Iteration time can be short with use of powerful RAD tools. o Productivity with fewer people in a short time. o Reduced development time. o Increases reusability of components. o Quick initial reviews occur. o Encourages customer feedback. o Integration from very beginning solves a lot of integration issues ● Data Mining ● Data Wrangling ● Data Visualization ● Python Programming including OOPs and Exception Handling No Databases were used, all the data was stored on Google Drive and Local Device. No Cloud Server were used ● Handling Huge Data and Data Cleaning ● JSON Data Serialization. ● Solving Complex Nested JSON among the data provided. ● Handling Huge Data and Data Cleaning Solved by Breaking the Dataset into 10 stream parts as the data was too huge and was not able to read easily in Jupyter NB. ● JSON Data Serialization Solved by Data Chunking with chunk\_size=20000 which means serialization of data with processing 20000 rows at a time. ● Solving Complex Nested JSON among the data provided. Viewed the Structure of the part of data in JSON Viewer then Changed the data in proper standard JSON Format. After Reading JSON Data Performing Normalization of Nested JSON data setting maximum level of normalization with specifying proper orient form. Then After Normalization remaining Unsolved Nested JSON was solved using Dictionary Conversions and Structuring the data.  Figure 1 Sample Input Dataframe After Converting Outer JSON Figure 2 Sample Output Dataframe After Solving Nested JSON and Data Preprocessing We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. Contact us: hello@blackcoffer.com © All Right Reserved, Blackcoffer(OPC) Pvt. Ltd

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Healthcare AI ChatBot using LLAMA, LLM, Langchain Efficient Supply Chain Assessment: Overcoming Technical Hurdles for Web Application Development Streamlined Integration: Interactive Brokers API with Python for Desktop Trading Application Efficient Data Integration and User-Friendly Interface Development: Navigating Challenges in Web Application Deployment AI Chatbot using LLM, Langchain, LLama AI Bot Audio to audio Methodology for ETL Discovery Tool using LLMA, OpenAI, Langchain Methodology for database discovery tool using openai, LLMA, Langchain Rising IT cities and its impact on the economy, environment, infrastructure, and city life by the year 2040. Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading financial firm in the USA Industry Type: Financial services & Consulting Services: Financial consultant Organization Size: 100+ Project “Sentimental Analysis on Shareholder Letter of Companies” objective was to Predict the Sentiments columns Shareholder Letter in terms of Polarity and Subjectivity finally classification of data into positive, negative and neutral tone. The project ‘Sentimental Analysis on Shareholder Letter of US Companies’ task involved data cleaning on shareholder letters of different companies which includes lemmatization, lower case conversion, removing special character, \n , \t , punctuations, numbers & single character and tokenization. To generate polarity and subjectivity columns for the letter 1 & letter 2 columns using the Textblob library of NLTK. Based on the polarity categorizing it into positive, neutral  &  negative.              i.  Lemmatisation              ii. lower case conversion              iii.  Removing Special character              iv.  Removing \n , \t etc              v.  remove punctuations, numbers & single character removal             vi.  forming list of letter data using tqdm ● Jupyter Notebook ● Anaconda ● Notepad++ ● Sublime Text ● Brackets ● Python 3.4 My project ‘Sentimental Analysis on Shareholder Letter of Companies’ developed with a software model which makes the project high quality, reliable and cost effective. ● Software Model : Waterfall Model ● For Project ‘Sentimental Analysis on Shareholder Letter of US Companies’ is a Waterfall Model as our model is not forming the loop from end to the start using Textblob which predicts Sentiments, Polarity and Subjectivity as the output following the Waterfall Model. No Database is used to complete this project. No Web cloud Server was required for this work. I have worked before on tasks similar to this so there were no challenges faced but the data cleaning was a bit different and required time to complete. As Discussed no technical Challenges were faced during this project. Figure 1: Input Data Schema Figure 2: Output Data Schema Figure 3: Sample Input Dataset figure 3 is pandas dataframe which was fetched from google cloud database there were 7 columns and 13290 rows. Figure 4: Sample Output Dataset figure 4 is output pandas dataframe after data cleaning and modeling of sentiment identification there are 13 columns and 13290 rows. Figure 5: Sentiments assignment based on polarity figure 5 represents the identification of sentiments and tone based on polarity and subjectivity. polarity>0 then sentiment type is positive,  if the polarity<0 sentiment type is negative and if the polarity=0 sentiment type is neutral. Figure 6:  Histogram Representation of Length of Shareholder Letter 1 figure 6 is histogram plot between length of shareholder letter 1 among the final output dataset. Figure 7:  Histogram Representation of Length of Shareholder Letter 2 figure 7 is Histogram plot between length of shareholder letter 2 among the final output dataset. Figure 8: Flow Chart We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. Contact us: hello@blackcoffer.com © All Right Reserved, Blackcoffer(OPC) Pvt. Ltd

# Article bctech2153: Population and Community Survey of America - Blackcoffer Insights

Healthcare AI ChatBot using LLAMA, LLM, Langchain Efficient Supply Chain Assessment: Overcoming Technical Hurdles for Web Application Development Streamlined Integration: Interactive Brokers API with Python for Desktop Trading Application Efficient Data Integration and User-Friendly Interface Development: Navigating Challenges in Web Application Deployment AI Chatbot using LLM, Langchain, LLama AI Bot Audio to audio Methodology for ETL Discovery Tool using LLMA, OpenAI, Langchain Methodology for database discovery tool using openai, LLMA, Langchain Rising IT cities and its impact on the economy, environment, infrastructure, and city life by the year 2040. Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading marketing firm in the USA Industry Type: Marketing services & Consulting Services: Marketing consultant Organization Size: 100+ Project ‘Population and Community Survey of America’ objective were to perform Data Abstraction, Data Structurization, Data Preprocessing, Data Cleaning, and Combining Data from all the years listed and finally presenting insights of the data by Exploratory Data Analysis. For Project ‘Population and Community Survey of America’ task involved fetching json and unformatted csv data from numerous web links further needed to process data, handling nested JSON, data conversion of JSON data in dataframe, performing certain pandas operation for feature selection and structuring data. Concat all this data into one csv file then handle missing value by mapping with another dataset finally perform certain data visualization and exploratory data analysis. Module 1: Data Abstraction The process of data abstraction involves collecting data from numerous web links from Year 2005 to 2017 and viewing the data using JSON viewer in tree format. Module 2: Data Chunking and Integration Was unable to process data in pandas so performed data chunking with chunksize 10000 rows at a time for year 2005 likewise performed for all other years data till 2017 and finally combined all the dataframes into one containing all data from year 2005 to 2017. Module 3: Handling Complexity of Nested Data & format the Unformatted CSV Files Handling unformatted CSV in proper comma separated format so that data frame can be formed. Dataframe produced after merging for all the years from 2005 to 2017 contains a lot of nested JSON data among certain attributes so performed normalization of nested Json forming new\_columns naming them based on their attributes key. 2.2.4 Module 4: Data Cleaning and Preprocessing Involves handling missing value, contraction mapping with another dataset to fill the missing State\_Zip\_Code column, handling inf and -inf within the dataset for some attributes and forming a new column population\_ratio based on passing formula among other attributes. 2.2.5 Module 5: Data Analysis This step involves forming a correlation matrix to understand the relation between numeric attributes. performed Exploratory Data Analysis on strong correlated attributes to understand pattern/relation between them.  After completion of Project we provided: ● Jupyter Notebook ● Anaconda ● Notepad++ ● Sublime Text ● Brackets ● Python 3.4 ● JSON Viewer ● Python ● ETL Techniques ● Advanced Excel Formatting  My project ‘Population and Community Survey of America’ developed with a software model which makes the project high quality, reliable and cost effective. ● Software Model : RAD(Rapid Application Development model) Model ● This Project follows a RAD Model as our model is not forming the loop from end to the start, also my project was based on prototyping without any specific planning. In the RAD model, there is less attention paid to the planning and more priority is given to the development tasks. It targets developing software in a short span of time. ● Advantages of RAD Model: o Changing requirements can be accommodated. o Progress can be measured. o Iteration time can be short with use of powerful RAD tools. o Productivity with fewer people in a short time. o Reduced development time. o Increases reusability of components. o Quick initial reviews occur. o Encourages customer feedback. o Integration from very beginning solves a lot of integration issues No Database is used in this project, only used Google Drive for Storing and Transferring Data. No Web Server is Used Data Cleaning and Filling out Missing Values by Data mapping with another dataset as the Data was not in proper format in the another dataset. Data Cleaning was done using a few built in pandas operations to deal with Missing Values, Ordering Data Columns, Data Formatting, Changing of data types and many more. Filling of remaining Missing Data from columns using Outer Join among the datasets and using Map Function of Python.   Figure 1: Input Data Schema for Year 2008   Figure 2: Output Data Schema from Year 2005 to 2017 Figure 3: Dataset for Year 2008 figure 3 is pandas dataset of year 2008 which has 169595 rows and 25 columns which was fetched from authenticated survey web portal, data obtained were in JSON format which were converted into pandas dataframe likewise there are dataframes created from year 2005 to 2017. Figure 4:  Output Preprocessed Dataset figure 4 is an output preprocessed dataset from 2005 to 2017 which has 26,41,363 rows and 25 columns. Figure 5: Describing Numeric Data of Preprocessed Dataset Figure 6: Bar plot of attribute state\_name figure 6 represents the bar plot among the state\_name on the final output dataset from year 2005 till 2017. Figure 7: KDE Graph for all numeric population data column of dataset figure 7 represents the Kernel Density Estimate Plot(KDE) among all Population estimate data columns for the Preprocessed Dataset. KDE plot is a method for visualizing the distribution of observations in a dataset, analogous to a histogram. KDE represents the data using a continuous probability density curve in one or more dimensions. Plotted many more graphs apart this between highly correlated attributes like pair plot, box plot, line plot etc.   Figure 8: Flow Chart We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. Contact us: hello@blackcoffer.com © All Right Reserved, Blackcoffer(OPC) Pvt. Ltd

# Article bctech2154: Google LSA API Data Automation and Dashboarding - Blackcoffer Insights

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Rising IT Cities and Their Impact on the Economy, Environment, Infrastructure, and City Life in Future Internet Demand’s Evolution, Communication Impact, and 2035’s Alternative Pathways Rise of Cybercrime and its Effect in upcoming Future AI/ML and Predictive Modeling Solution for Contact Centre Problems How to Setup Custom Domain for Google App Engine Application? Code Review Checklist Client: A leading marketing firm in the USA Industry Type: Marketing services & Consulting Services: Marketing consultant Organization Size: 100+ For this project objective was to perform API Data Abstraction using Google LSA API in GCP, Automation of data fetching and storing in BigQuery on daily basis, Storing Historical data for all active companies, Fetching Customer Report then storing data on daily basis in BigQuery also storing Historical data for all companies, Perform Linear Regression Modelling on Historical data for all companies and storing the modeling Summary in google sheet in a structured manner, Basecamp Automation with LSA Daily Data, Creating 4 BI Dashboard in Data Studio for Live, Historical, Modelling and Customer Report data for all companies.  For this project task was to obtain an account report and detailed lead report for a specific dates and customer\_id using Google Local Service Ads API Service in Google Cloud Platform. Further need to integrate with Google BigQuery database storing MCC data for all companies on a daily basis then storing Historical data for all active companies. Also notifying clients through email and passing messages containing daily account data in a message format to BaseCamp Message Board and Campfire of respective company projects through its API all with python programming, further deploying the script on Heroku Server for automating all this task. Then Creating BI Dashboard in Data Studio connecting with BigQuery and Creating Live Dashboard, Historical Dashboard for all companies.  On historical data for all companies, Linear Regression Modelling needs to perform and to create Modelling Dashboard for all companies in Data Studio. Further needs to do  Exploratory Data Analysis for all companies on Historical Data.  To Store Customer Account Report for message lead and phone lead on a daily basis, Script needs to be created and deployed in Heroku and also need to store Historical data for these companies and Finally Create Data Studio Dashboard on it. Creating Sales Representation Dashboard for two Companies which involves multiple Reports and blending of multiple data sources from Big Query. >> Module 1: API Data Abstraction Which first includes generation of the access token and refresh token with the scope of Google AdWord API for the authentication and connecting with Google LSA API. Then fetching daily data in JSON format for particular account name based on customer\_id assigned in API URL while fetching data. Likewise generating a script that would Handle data generation for all other active accounts based on their customer id. >> Module 2: Data Imputation and Storing Converting the JSON data to the pandas data frame forming a list of data frame for all the active accounts by looping them then deriving certain more attributes based on their handling the missing and inf values. Finally storing the data in Google Big Query database within the respective table for all accounts using Bigquery API.   >> Module 3: Data Storing in BigQuery and Notification Automation The task was to automate notifications sent to email and to Basecamp and the data transferred to the database on a daily basis by deploying the script to Heroku Server setting time parameters based on the New York time zone. >> Module 4: Automation tools created till now: i. LSA\_AccountReport\_daily\_BigQuery tool: For Automation of Account Report for all companies on a daily basis. Scheduling it at 1:00 am in the Los Angeles Timezone. ii. LSA\_AccountReport\_Historical\_API tool:  For Storing Historical Data for companies for the last few Years till the end date which we set. iii. Basecamp\_lsa\_automation: This is used to pass the lsa data in a message format to Campfire for respective companies groups and store lsa data combined for all companies to Messageboard and Campfire at one Automation Python Group in Basecamp. iv. LSA\_DateRange Tool: Used to store missed out data for all the companies for a few sets of days or months as per the need. v. LSA\_MainSheet\_AutoUpdation tool: For Auto updation of main sheet  ‘LSA Client Lead’  Google Sheet. As Daily Data are fetched on the basis of this list so it is required to auto update this sheet for all the new companies entered would store information of those like company name, account id and database name. vi. LSA\_daily\_CustomerReport tool: Created to Store LSA Customer Report for all companies in database ‘CustomerReport\_PhoneLead’ & ‘CustomerReport\_MessageLead’ on daily basis. vii. Historical\_LSA\_CustomerReport tool:  Created to Store LSA Customer Report for all companies in database ‘CustomerReport\_PhoneLead’ & ‘CustomerReport\_MessageLead’ storing historical data for year 2021. >> Module 5: Data Studio BI Dashboards Created: i. Historical Dashboard ii. Live Dashboard ii. Customer Report Dashboard iii. Modelling Report Dashboard iv. Sales Representation Dashboard ● PyCharm ● Jupyter Notebook ● Anaconda ● Heroku ● Notepad++ ● Google Sheet API ● Google LSA API on GCP ● Google BigQuery ● Sublime Text ● Brackets ● JsonViewer ● Python ● SQL My project ‘Google Adword LSA API Reports automation into Google Big Query database and Basecamp’ developed with a software model which makes the project high quality, reliable and cost-effective. ● Software Model: RAD(Rapid Application Development model) Model ● This project follows a RAD Model as our model is not forming the loop from end to the start, also my project was based on prototyping without any specific planning. In the RAD model, there is less attention paid to the planning and more priority is given to the development tasks. It targets developing software in a short span of time. ● Advantages of RAD Model: o Changing requirements can be accommodated. o Progress can be measured. o Iteration time can be short with the use of powerful RAD tools. o Productivity with fewer people in a short time. o Reduced development time. o Increases reusability of components. o Quick initial reviews occur. o Encourages customer feedback. o Integration from the very beginning solves a lot of integration issues ● API Data Abstraction ● Data Mining and Statistical Modelling ● Data Wrangling ● Deployment for Automation ● Data Visualization ● SQL ● Machine Learning ● Python Programming including OOPs and Exception Handling ● Google Firestore (Just for Testing Purpose) ● Google BigQuery Google BigQuery Cloud Database with up to 1 TB of free storage is being used.  ● Scheduling Automation of Python Script. ● Data Exceptions and Duplication in BigQuery Tables. ● Refresh token Expiration After 7 Days. ● Data Exception due to Inactive companies or not Updation of LSA Main sheet.  ● Basecamp ProjectId Issue for transferring Data to multiple companies projects. ● Data Studio Time Series Plot data mismatch due to multiple account id. ● Scheduling Automation of Python Script. Python Library BlockingScheduler were used and the Timezone variable ‘TZ’ was set to Los Angeles in Heroku ● Data Exceptions and Duplication in BigQuery Tables.        Structuring SQL Query to deal with all the database issues which were being used in BigQuery to solve those issues. ● Refresh token Expiration after 7 Days. Initially ‘Auth Playground’ was used for generating Refresh token which was getting expired after every 7 Days so to last it longer for more than a year we are now using the refresh token which was generated using Python script where proper token endpoints and many other headers were defined before generating the refresh token. ● Data Exception due to Inactive companies or not Updation of LSA Main sheet.  Data Exception occurred while API data abstraction for few of the companies which were solved by adding more nested try and except statements after understanding issues also ‘LSA Clients Lead’ main sheet was not being updated by other members due to which we missed out data for few of the companies which were solved by creating script which will automatically update the mainsheet when an error occurred. ● Basecamp ProjectId Issue for transferring Data to multiple companies projects. This issue was solved by creating Basecamp Main sheet where data was fetched now by mapping the account id of fetched data using LSA Main sheet and project id of all the basecamp companies. ● Data Studio Time Series Plot data mismatch due to multiple account id. Solved by adding many parameters like setting the metrics which will do a summation of all the companies on a particular day for all the account id. We provide intelligence, accelerate innovation and implement technology with extraordinary breadth and depth global insights into the big data,data-driven dashboards, applications development, and information management for organizations through combining unique, specialist services and high-lvel human expertise. Contact us: hello@blackcoffer.com © All Right Reserved, Blackcoffer(OPC) Pvt. Ltd

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