Dennis Mwendwa

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PROFESSIONAL SUMMARY

Innovative and zealous programmer seeking to leverage extensive background in data analysis and trends. Proficient in Python programming, I have successfully developed and maintained scalable and efficient software applications. Demonstrated strong problem-solving skills by implementing optimized algorithms and data structures in Python, significantly improving system performance. All in all, I am a one that is conversant with new and emerging technologies that tend to benefit me in the various endeavours that I undertake within the tech space with a current peak interest in back-end development.

EDUCATION

Primary School Education   January 2006 - June 2016
Kenya Certificate of Primary Education(K.C.P.E)   *GPA: 404/500*
Whitestar Academy, Nairobi, Kenya

Secondary School Education   January 2017 - April 2021
Kenya Certificate of Secondary Education(K.C.S.E)   *GPA: A-*
Nairobi School, Nairobi, Kenya

Undergraduate Education   September 2021 - Current
B.Sc. Computer Science
Jomo Kenyatta University of Agriculture and Technology

SKILLS

Languages: C, Python, SQL, PhP, HTML/CSS, LaTeX
Tools: Git/GitHub, Unix Shell, VS Code, MySQL Workbench, PyCharm, IBM Cognos, Excel, Power BI, Ms Office, Microsoft Dynamics 365
Operating Systems: Linux, Windows

PROJECTS

Analyzed the Relationship Between HIV Prevalence and Multidimensional Poverty | *Python, Pandas, GeoPandas Seaborn, Matplotlib, Jupyter*

- Conducted a cross-national analysis of the relationship between HIV prevalence and multidimensional poverty using datasets from the WHO Global Health Observatory and World Bank
- Cleaned and preprocessed multi-source datasets; to enable accurate merging and comparison.
- Integrated HIV and poverty datasets by country and year, forming a comprehensive panel dataset to support temporal and spatial analysis.
- Built and interpreted correlation matrices to explore statistical relationships between HIV prevalence and poverty sub-indicators (e.g., education, sanitation, electricity)
- Visualized key trends using time-series plots and scatter plots to support pattern discovery and hypothesis testing using interactive visualization libraries (e.g., Plotly) to enhance data exploration and stakeholder presentation quality.
- Isolated countries accounting for 75% of the global HIV burden, which included South Africa, Nigeria, Mozambique, India, and Kenya
- Analyzed under-five and neonatal mortality in East African Community (EAC) countries using UN IGME data.
- Filtered the mortality dataset for 8 EAC countries then used GADM shapefiles to visualize latest estimates of under-five and neonatal mortality for these countries via choropleth maps, reinforcing geographic storytelling
- Demonstrated ability to work with real-world, imperfect data and draw actionable insights from public health and socio-economic datasets.

Analyzed Kenya Data | *Jupyter Notebook ,HTML, Git,VS Code*
- Extracted Kenya's 2019 census data from KNBS
- Performed comparative and descriptive insights and visualized the Kenya 2019 census data
- Cleaned and transformed Kenya's weather data from 1991-2016, providing quality data
- Identified correlations and applied statistical methods to find the best fit model for average data across the years
- Analyzed Stock Prices from Historical Data (NSE from 2007 - 2012) to understand patterns, predict future movements, and make data-driven investment decisions.
- Predicted the closing price of stocks based on key predictors using ML techniques
- Analyzed Road accidents data and used classification models to predict how risky a road is prone to traffic accidents
- Exported the Jupyter Notebook file to HTML to allow interactive visualizations to be seamlessly integrated with the code and analysis

Analyzed Personal Spotify and Apple Music Data | *Power BI ,Excel*
- Extracted personal Spotify and Apple Music data
- Cleaned and transformed raw data into useful information
- Created interactive dashboards providing comparative and descriptive insights
- These dashboards were designed to be dynamic, offering tailored insights at a glance, demonstrating proficiency in Power BI's advanced visualization and data modeling capabilities.
- Applied DAX queries to create calculated measures and columns, enabling insights such as most-streamed genres, artists, and time-based listening patterns.

Movie Ticket Booking System | *Python, MySQL, Linux Shell, Power BI, PhP*
- Built a robust MySQL database for a ticket booking system, incorporating essential tables for customers, movies, showtimes, theatres, seats, and bookings.
- Advanced logic was implemented using triggers to handle tasks like: Dynamic price calculations based on seat category, showtime, and customer type (e.g., applying a 25% discount for students).
- The backend system was developed in Python, leveraging libraries like mysql-connector to connect to the MySQL database. Python scripts acted as the core interface between users and the database.
- Python classes (Customer, Movie, Theatre, Seat, etc.) handled operations like: Customer data entry and validation, Displaying movies and their available showtimes, Viewing and managing seating charts, Adding, confirming, and canceling bookings.
- Distributed the Database via Master-Slave Replication:
  * A master-slave replication model was implemented to improve database performance and scalability.
  * The master database managed all write operations, such as adding bookings, updating customer information, and modifying seat statuses.
  * The slave databases were optimized for read-heavy operations like retrieving seating charts or displaying available showtimes.
  * Automated the backup process using cron jobs in combination with database-specific tools (e.g., mysqldump, mysqlbackup).
  * This architecture enhanced system performance and reduced latency for users by reducing the load on the master node. It also provided redundancy to safeguard against failures.
- A data warehouse was designed and set up to aggregate and store data for analytics.
  * ETL pipelines extracted transactional data from the MySQL database, transformed it into meaningful metrics (e.g., total revenue by showtime), and loaded it into the data warehouse.
  * A star schema was used to optimize the warehouse for analytical queries, with fact tables (e.g., booking data) linked to dimension tables (e.g., customers, movies, showtimes).
  * The warehouse enabled deeper insights into system operations, such as:
    · Revenue trends and peak booking times.
    · Customer behavior analysis (e.g., preferences for certain movies or showtimes).
    · Utilization rates of seat categories.

- Power BI Integration:
  * Connected Power BI to MySQL: Installed the MySQL ODBC driver (9.1). Successfully connected Power BI to your MySQL database using the ODBC connector.
  * Power BI was used for reporting and visualization, connected either directly to the MySQL database or the data warehouse:
    · Dashboards were created to display real-time insights like popular movies, peak booking periods, seat occupancy rates, and revenue breakdowns.
    · Dynamic, user-friendly reports empowered stakeholders to make data-driven decisions.
- Currently building the web application implementation

Chama App | *Python, C, XAML, .NET Framework, APIs (Google), Git,VS Code*
- Collaboration project for a sacco management system
- Developed python SMTP scripts that enable email automation increasing efficiency and time saved
- Learned how to connect to gmail servers and use databases in conjunction with Google APIs
- Generated reports - individual member and sacco reports

CERTIFICATIONS

Microsoft Certified: Azure Fundamentals: Microsoft
Introduction to Data Analytics: Coursera
Data Analysis with Python: Freecodecamp
SQL Intermediate: HackerRank
Excel for Data Analysis: IBM
Data Visualization and Dashboards with Excel and Cognos: IBM
Alteryx Foundational Micro-Credential: Alteryx
International Computer Drivers License - Level One (ICDL): ICDL Africa