AI For Enterprise Reporting

Summary

Embracing AI across all facets of enterprise reporting empowers developers to dramatically enhance efficiency, quality, and innovation. By integrating AI into DevOps, project management, data modeling, BI applications, and developing prompt libraries, developers can automate routine tasks, enforce standards, and streamline workflows. This leads to faster deployment of higher-quality reports and improved collaboration. AI tools not only automate mundane tasks but also provide intelligent insights and foster better communication among team members and stakeholders. Adopting AI positions the team for greater success and innovation in delivering exceptional reporting solutions.

DevOps

In the context of enterprise reporting, DevOps practices ensure efficient collaboration between development and operations teams. Integrating AI into DevOps can automate routine tasks, enforce coding standards, and streamline workflows, leading to faster deployment and higher-quality reports.

GIT

Git is essential for version control and collaboration. AI can enhance Git workflows by automating and enriching certain aspects.

- **Commit Messages (Comparing Files)**: Utilize AI to automatically generate detailed commit messages by analyzing changes between files. This ensures that commit messages are informative and consistent, aiding in code reviews and future reference.
- **Initial Commit: Generate Zip File with Folder Hierarchy**: Automate the creation of a standardized folder structure for new projects. AI can generate a zip file containing the necessary directories and placeholder files, ensuring all projects start with the same organization.
- **Generate Naming Conventions or Style Guides**: Use AI to create and enforce naming conventions and coding style guides across the team. This promotes code readability and maintainability by ensuring everyone follows the same standards.

Workflows

Efficient workflows are crucial for productivity. AI can help document, visualize, and optimize these workflows.

- **Generate Wiki Documentation for Internal Processes**: Automatically create comprehensive wiki pages that document internal processes, standards, and onboarding workflows. This serves as a centralized knowledge base for current and new team members.
- **Format Existing Documentation in Markdown**: Convert existing documents into Markdown format for easy sharing and compatibility with various tools and platforms. AI can automate this conversion while preserving formatting and structure.

- **Generate Mermaid Diagrams from Workflow Documentation**: AI can parse textual workflow descriptions and generate Mermaid diagrams, providing visual representations of processes. This helps team members quickly understand and follow workflows.

Sample Prompts:

- *"Given the following code changes, generate a concise and descriptive commit message:**[insert code diff here]**."*
- *"Analyze these file modifications and create a commit message summarizing the key updates and their purpose: **[insert code changes]**."*
- *"Write a commit message that explains the changes between Version A and Version B of the file: **[provide excerpts or descriptions of changes]**."*
- *"Design a folder hierarchy for a new **[project type]** project, including standard directories and placeholder files."*
- *"Generate a list of folders and files for initializing a **[programming language/technology]** project following best practices."*
- *"Provide a script or instructions to create a standardized folder structure for our projects."*
- *"Develop a naming convention guide for variables, functions, and files in our **[programming language]** projects."*
- *"Create a coding style guide for our team that includes formatting rules, naming standards, and best practices."*
- *"What are recommended naming conventions for database tables and columns in SQL?"*
- *"Draft a wiki page outlining the steps for onboarding new team members, including necessary tools and resources."*
- *"Create documentation for our code review process, detailing each step and responsible parties."*
- *"Summarize our deployment workflow for inclusion in the team wiki."*
- *"Convert the following text/document into Markdown format: **[insert text or document content]**."*
- *"Transform this HTML/Word document into Markdown while retaining headings and bullet points: **[insert content]**."*
- *"Provide a Markdown version of the attached process document."*
- *"Based on the following workflow description, create a Mermaid flowchart diagram: **[insert workflow steps]**."*
- *"Generate a Mermaid sequence diagram illustrating the interaction between components as described: **[provide interaction steps]**."*
- *"Create a Mermaid diagram to visualize this organizational hierarchy: **[insert hierarchy details]**."*

Project Management

AI can significantly improve project management by automating administrative tasks and enhancing communication.

Requirements Documentation

Accurate and detailed requirements are the foundation of successful projects.

- **Create Intake or Requirements Forms**: Develop AI-powered forms that guide stakeholders through the process of submitting project requests. This ensures all necessary information is captured upfront, reducing back-and-forth communication.
- **Generate Project Timelines Based on Responses**: Use AI to analyze project requirements and automatically create realistic timelines. This considers resource availability, task dependencies, and potential risks.
- **Draft Customer Emails to Set Expectations**: Automate the drafting of professional emails to customers, outlining project scopes, timelines, and expectations based on their responses. This ensures clear and consistent communication.

Prototyping

Prototyping allows teams to explore ideas and gather feedback before full-scale development.

- **Generate Synthetic Data for Proof of Concept**: Create realistic but anonymized datasets using AI. This enables the development of prototypes without compromising sensitive data, facilitating early testing and demonstrations.
- **Generate Appropriate Charts/Graphs to Present Data**: AI can suggest and create the most effective visualizations for a given dataset. This helps in presenting data in a way that is easily understandable to stakeholders.

Customer Engagement

Effective communication with customers is key to project success.

- **Summarize Status Updates Utilizing Commit Messages**: AI can compile recent commit messages and development activities into coherent status reports for clients, keeping them informed about progress.
- **Summarize Meeting Notes with Next Steps and Follow-Up Dates**: After meetings, AI can generate summaries highlighting key decisions, assigned tasks, and deadlines, ensuring all parties are aligned on next steps.
- **Generate End-User Test Scripts**: Create test scripts that guide end-users through testing new features or reports. This ensures thorough testing and helps identify issues early.
- **Synthesize User Feedback**: Analyze feedback from users to identify common concerns, suggestions, or issues. AI can categorize and prioritize this feedback for the development team to address.

Sample Prompts:

- *"Design a project intake form that captures scope, objectives, timelines, and resource needs."*

- *"What questions should be included in a requirements form for a new data reporting project?"*
- *"Generate a template for collecting project requirements from stakeholders."*
- *"Given these project requirements, create a project timeline with milestones: **[insert requirements]**."*
- *"Develop a Gantt chart based on the following tasks and durations: **[list tasks with estimated times]**."*
- *"Estimate the project duration considering the dependencies and resource constraints provided: **[insert details]**."*
- *"Compose an email to the client summarizing the agreed project scope and next steps."*
- *"Draft an email to set expectations about the project timeline and deliverables for **[project name]**."*
- *"Write a follow-up email confirming the requirements discussed and outlining the action plan."*
- *"Generate a synthetic dataset with [number] records for **[industry/type of data]**, including fields such as **[list fields]**."*
- *"Create sample data that mimics customer purchase patterns for testing purposes."*
- *"Provide anonymized data similar in structure to our production database schema: **[describe schema]**."*
- *"What are the best chart types to visualize the following data: **[describe data]**?"*
- *"Generate a bar chart showing **[X metric]** over **[Y period]** using this data: **[insert data]**."*
- *"Suggest visualizations to compare **[variable A]** and **[variable B]** in the dataset."*
- *"Summarize the following commit messages into a client-friendly status update: **[insert commit messages]**."*
- *"Create a progress report based on these development activities: **[list of activities]**."*
- *"Draft an update email highlighting the key developments from this week's commits."*
- *"Summarize the following meeting notes, including action items and deadlines: **[insert meeting notes]**."*
- *"Provide a brief overview of our meeting, emphasizing the next steps for each team member."*
- *"Draft a follow-up email outlining the key points discussed and scheduled follow-up dates."*
- *"Develop a user acceptance test script for the new reporting dashboard, including expected results."*
- *"Write step-by-step instructions for end-users to test the latest feature addition."*
- *"Create a test plan for users to validate data accuracy in the updated report."*
- *"Summarize the following user feedback and identify the top three concerns: **[insert feedback]**."*
- *"Analyze these survey responses to extract key improvement suggestions."*

- *"Categorize the user comments into themes and prioritize them based on frequency."*

Data Modeling

Data modeling is critical in structuring data effectively for reporting purposes. AI can enhance this process by providing insights and automating documentation.

DDL Scripts

Data Definition Language scripts define database structures.

- **Create Scripts with Richer Annotations**: AI can add detailed comments to DDL scripts, explaining the purpose of tables, relationships, and constraints. This aids in knowledge transfer and future maintenance.
- **Enhance DDL `CREATE`/`ALTER` Scripts with Column Comments**: Automatically generate comments for each column, detailing data types, default values, and any important considerations. This provides clarity to anyone reviewing or using the database schema.

SQL

Efficient SQL queries are essential for performance and scalability.

- **Create Queries with Richer Annotations**: AI can assist in writing SQL queries that include comments explaining complex joins, filters, and calculations. This makes queries easier to understand and modify later.
- **Improve Efficiency Based on Database Engine**: Optimize SQL queries by tailoring them to the specific database engine (e.g., Oracle, SQL Server, MySQL). AI can suggest indexing strategies or query rewrites to enhance performance.
- **Contextualize Prompts Using Database DDL Scripts or Source Systems**: Provide AI with context from existing DDL scripts or source system details to generate more accurate and relevant SQL code.
- **Refactor Queries Based on Internal Standards**: Ensure all SQL code adheres to company coding standards. AI can refactor queries to match preferred styles, naming conventions, and best practices.

Excel

Excel is widely used for data analysis and reporting.

- **Clean Excel Files**: Use AI to automate data cleaning tasks, such as removing duplicates, correcting errors, and normalizing data formats within Excel files.
- **Create Excel Formulas**: Generate complex formulas to perform calculations, data lookups, or conditional logic. AI can assist users in crafting these formulas accurately.

Sample Prompts:

- *"Generate a DDL script for a database with tables for **[entities]**, including comments explaining each element."*
- *Please reorder these columns based on categories (limit to 4-5 categories). Add the category as a comment. Add a presentation label for each column that's easy to understand. The database is **[Insert Database Type]**.*

- *Please write a concise explanation of this query for report developers, focusing on how the data source is built and its level of detail. The explanation should be suitable for a Tableau developer to read in 30-45 seconds. Include the tables from which the fields are sourced. Present the explanation in a code block as plain text with appropriate line wrapping.*
- *"Add detailed annotations to the DDL script: **[insert script]**."*
- *"Explain the purpose and relationships in this database schema: **[describe or insert schema]**."*
- *"For the following table definition, add comments to each column explaining its purpose: **[insert table definition]**."*
- *"Enhance this DDL script with column descriptions and data type explanations: **[insert script]**."*
- *"Provide an annotated version of the CREATE TABLE statements with detailed column comments."*
- *"Write an SQL query to **[describe task]**, including comments explaining each part of the query."*
- *"Annotate the following SQL query to explain its logic: **[insert SQL query]**."*
- *"Create a complex SQL statement with inline comments for maintainability."*
- *"Optimize this SQL query for [database engine], considering performance best practices: **[insert query]**."*
- *"Suggest improvements to enhance the execution speed of this query on **[database platform]**."*
- *"How can I rewrite this query to be more efficient in [database engine]? **[insert query]**."*
- *"Based on this DDL script, write an SQL query to retrieve [specific data]: **[insert DDL script]**."*
- *"Using the schema from our source system, generate queries to extract **[data requirement]**."*
- *"Given the following table structures, how can I join them to get [desired result]? [describe tables]**."*
- *"Refactor this SQL query to comply with our coding standards: **[insert query]**."*
- *"Apply best practices to improve the readability and maintainability of this SQL code."*
- *"Rewrite the query using our standard naming conventions and formatting guidelines."*
- *"Describe steps to clean an Excel dataset with duplicate entries and inconsistent date formats."*
- *"How can I normalize data in Excel to prepare it for analysis?"*
- *"Provide a VBA script to remove blank rows and correct formatting issues in an Excel file."*
- *"Write an Excel formula to calculate the year-over-year growth between two cells."*
- *"How can I use VLOOKUP to match data from another sheet based on **[criteria]**?"*
- *"Create a formula that sums values in a column only if another column meets certain conditions."*

BI Application

Business Intelligence applications like Tableau are central to enterprise reporting, providing tools for data visualization and analysis.

Documentation

Proper documentation ensures that reports are understandable and maintainable.

- **Utilize "Describe Sheet" Function or Screenshots to Generate Report Documentation**: AI can extract metadata and visual elements from BI reports to create comprehensive documentation, including data sources, filters, and visualization types.
- **Annotate Calculated Fields with Inline Comments**: Encourage the practice of adding comments to calculated fields within BI tools. AI can prompt users to provide explanations, enhancing clarity for future editors.
- **Annotate Dashboards or Sheets with Helpful Hints**: Add tooltips or notes within dashboards to guide users on how to interact with the data, interpret results, or understand the significance of metrics.

Calculated Fields

Calculated fields add dynamic data manipulation within BI tools.

- **Optimize Calculated Fields**: AI can analyze calculated fields for performance issues or errors, suggesting optimizations or corrections.
- **Write Regex Expressions**: Assist in writing regular expressions for data parsing, validation, or transformation tasks within calculated fields.

Analysis

AI can augment the analytical capabilities of BI applications.

- **Suggest Statistical Techniques**: Based on the dataset and analysis goals, AI can recommend appropriate statistical methods (e.g., regression analysis, clustering) to extract deeper insights.
- **Suggest the Best Visualization**: Provide suggestions for the most effective chart types or visualizations to represent data accurately and intuitively, considering best practices and audience needs.

Sample Prompts:

- *"Based on this Tableau dashboard screenshot, generate documentation describing its components and data sources."*
- *"Explain the filters and parameters used in this BI report: **[insert description or image]**."*
- *"Create a summary of the visualizations and their purposes in this report."*
- *"How should I document this calculated field to explain its logic? **[insert calculated field expression]**."*
- *"Suggest comments to add to this formula to clarify its purpose in the dashboard."*
- *"Provide an annotated version of this calculated field for better understanding."*

- *"What helpful hints can I add to this dashboard to improve user experience?"*
- *"Suggest tooltip text for these data points to explain their significance."*
- *"How can I guide users through interacting with this report?"*
- *"Review this calculated field for efficiency and suggest improvements: **[insert formula]**."*
- *"Identify any errors in this calculation and provide a corrected version."*
- *"How can I optimize this complex formula to improve dashboard performance?"*
- *"Write a regex pattern to extract email usernames from full email addresses."*
- *"How can I use regex to validate phone numbers in the format (XXX) XXX-XXXX?"*
- *"Create a regular expression to split strings on commas except when inside quotes."*
- *"What statistical techniques should I use to analyze sales trends over time?"*
- *"Suggest methods to segment our customer base using the following data: **[describe data]**."*
- *"How can I determine if there's a correlation between variables A and B?"*
- *"What is the best way to visualize the relationship between **[variable X]** and **[variable Y]**?"*
- *"Recommend a chart type to display the distribution of **[data set]**."*
- *"How should I visualize hierarchical data to make it easily understandable?"*

Public Prompt Libraries

- GPT Prompts for Data Teams
- Promptmatic.ai
- Analytics Hacker
- Analytics Yogi
- Storytell.ai
- Data Science with These 35 Actionable Prompts
- Glean Work AI Prompt Library
- Anthropic Prompt Library
- AI Prompts for Education
- Open AI Prompt Examples